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OHIO ENERGY STATUS REPORT

STATE OF OHIO
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STATE OF OHIO
OHIO DEPARTMENT OF DEVELOPMENT
DIVISION OF ENERGY

In accordance with Section 1551.04(E) of the Ohio Revised Code, the Ohio Division of Energy hereby submits its annual Energy Status Report. For further information, contact the Information and Computer Support office at (614) 466-6517.

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OVERVIEW OF OHIO 1983 ENERGY CONSUMPTION

Statewide Energy Use and Consumption

Ohio aggregate energy consumption was 14.7 percent less in 1983 than the previous year. The bulk of this decrease can be attributed to a significant reduction in coal consumption by electric utilities for generation of electricity. Energy required for generation declined 14.1 percent from 1982; this reduced total coal purchases despite an increase in the amount of electricity generated and sold during 1983. Coal use fell 9.3 percent, one of the largest single year reductions in over 10 years.

TABLE 1 OHIO GROSS ENERGY CONSUMPTION BY SECTOR
Trillion Btu

	1978	1979	1980	1981	1982	1983
Residential	669.4	643.1	603.6	590.7	562.2	510.5
% of Total	17.1	16.1	16.3	16.7	17.0	16.3
Commercial	400.4	388.4	370.7	353.1	343.9	342.4
% of Total	10.2	9.7	10.0	10.0	10.3	10.9
Industrial	1306.2	1351.8	1186.8	1171.4	928.7	911.5
% of Total	33.4	33.8	32.1	33.1	28.0	29.0
Transportation	826.3	795.4	743.9	723.7	690.1	690.7
% of Total	21.1	19.9	20.1	20.4	20.8	22.0
Energy for Electricity Generation	708.6	815.9	793.9	709.5	798.7	685.8
% of Total	18.1	20.4	21.4	20.0	24.0	22.2
Total Consumption	3910.9	3994.6	3698.9	3548.4	3323.6	3140.9

Ohio 1983 per capita energy consumption continued to decline. Ohio per capita energy consumption dropped from 310.6 Mbtu in 1982 to 293.5 Mbtu in 1983. This represents an increase in energy efficiency of 5.5 percent. At the national level, 1983 per capita energy consumption remained relatively constant at 312.7 Mbtu. (See Table 4)

Within the primary consuming sectors, residential consumption exhibited the largest decline in total energy used, with a reduction of 9.2 percent from 1982 to 1983. The commercial, industrial, and transportation sectors remained relatively constant in both consumption and their proportion to state aggregate consumption.

TABLE 2 **SECTORAL ENERGY CONSUMPTION SHARES**

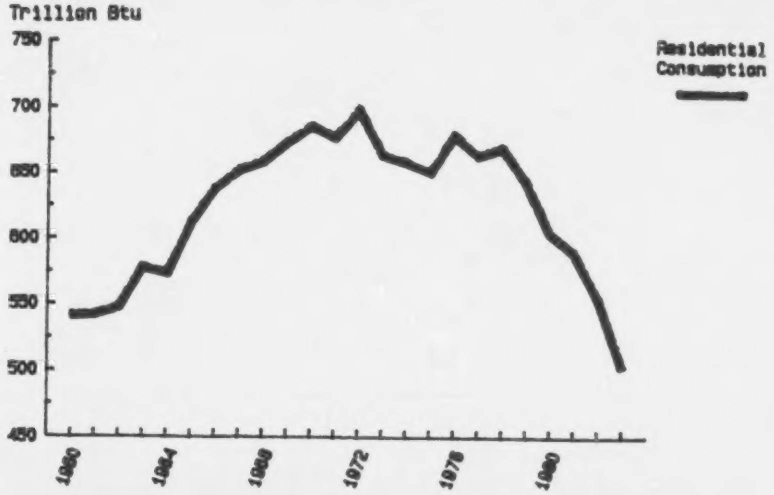
	OHIO		U.S.
	1983	1982	1983
INDUSTRIAL	29.0%	28.0%	27.8%
ELECTRIC UTILITY	21.8%	24.0%	25.0%
TRANSPORTATION	22.0%	20.8%	26.9%
RESIDENTIAL	16.3%	17.0%	
COMMERCIAL	10.9%	10.3%	
TOTAL CONSUMPTION TRILLION BTU	3,140.9	3,323.4	70,515.0

NATIONAL DATA NOT DISAGGREGATED FOR RESIDENTIAL AND COMMERCIAL SECTORS

Ohio Residential Sector

Ohio residential consumers continue to increase the efficiency with which they use energy. In 1983, aggregate residential consumption declined 9.2 percent from 1982. Residential energy consumption is defined as private household use of energy predominantly for space heating, water heating, air conditioning and cooking. Since 1978, the average Ohio residential energy consumer reduced total annual energy use by more than 23.8 percent.

The most significant change in residential fuel consumption from 1982 was a 10.5 percent reduction in the amount of natural gas consumed. Natural gas consumption declined from 367.9 Tbtu in 1982 to 329.2 Tbtu in 1983. At an average cost of $5.00 per thousand cubic feet, Ohio residents saved more than $185 million on avoided natural gas costs due to this reduction.



OHIO RESIDENTIAL SECTOR ENERGY CONSUMPTION
1960 - 1983

FIGURE 1

Nationally, the composite residential and commercial end-use sector comprised a significantly smaller portion of total energy consumption than in Ohio. This proportional difference in consumption may be attributed to greater space heating requirements for Ohio homes and businesses versus the U.S. average. Heating requirements, measured in weather degree day data, in Ohio were 13 percent higher than U.S. average during 1983.

The large fluctuations in heating requirements caused in previous years by severe weather were not present for the winter of 1982-1983. Degree day data which measure the Tbtu required within one heating season to raise temperatures to 65 degrees farenheit, remained comparable for 1982 and 1983. Since there was virtually no change in population for the same period, the reduction in natural gas consumption can be attributed to conservation induced by the large retail price increases which occurred in 1983.

The refined petroleum products used as heating fuels are residuals, distillates and kerosene. These fuels often substitute for natural gas heating. Since residential petroleum consumption declined 10.3 percent from 1982 to 1983, and consumption of electricity remained relatively stable, significant conservation effort was evident in refined petroleum products used in the residential sector during 1983.

Coal, which comprises less than one percent of all residential fuel use, declined 15.6 percent. An actual inventory of small purchases used for wood/coal burning stoves is not available. Though a minor increase in residential coal consumption was noted from 1981 to 1982, the consumption reduction in 1983 would tend to indicate that coal is not becoming a favored alternative to existing heating fuels.

OHIO COMMERCIAL SECTOR ENERGY CONSUMPTION
1960 - 1983

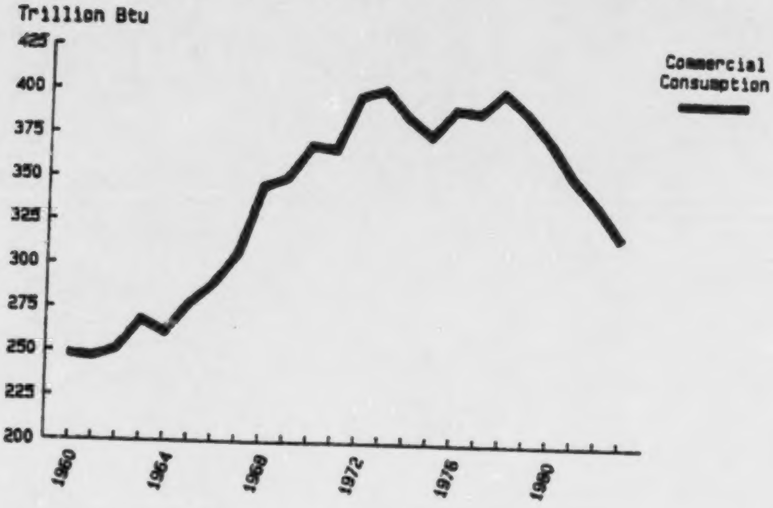


FIGURE 2

Ohio Commercial Sector

Ohio's commercial sector is composed of non-manufacturing business establishments which include motels, restaurants, wholesale businesses, retail stores, and health, social, governmental and educational institutions. Total fuel consumption by the commercial sector declined less than one percent in 1983.

Over the past few years, commercial natural gas consumption has followed the same pattern as that for the residential sector. This was again true in 1983 when commercial natural gas consumption declined 12.6 percent. However, this was offset by a comparable increase in electricity consumption. In 1983, natural gas accounted for approximately 42 percent of total commercial energy consumption.

Commercial consumption of electricity increased an astonishing 12.1 percent from 1982 to 1983. During the previous year, commercial demand for electricity increased 2.0 percent which was more in keeping with the trend of past decades. Electrical space heating additions or conversions alone cannot account for such a significant increase in demand. It is surmised that the increase, which brought commercial demand for electricity to a record level, underscored the technical changes and economic recovery occurring in this sector of Ohio's economy.

Contrary to the trend observed in other sectors, commercial coal consumption increased 78.0 percent; although coal only accounts for less than one percent of total commercial energy consumption. This increase did not substantially impact either aggregate coal consumption levels or overall commercial sector totals. However, 1983 was the first year since 1974 that commercial coal consumption exceeded 10 Tbtu.

Commercial energy use, particularly electricity consumption, is highly dependent on the vitality of Ohio's overall economy. The amount of energy consumed by retail stores, motels, restaurants, etc., depends directly upon residential consumers, their disposable incomes, geographical wage levels, plus indirectly significant factors such as transportation and commodity costs.

During 1983, total Ohio wage and salary disbursements increased approximately 12.0 percent. Personal income measured in constant dollars increased 10 percent while consumer price increases remained well below the national increase. Transportation fuel prices declined. Food and entertainment prices rose only five percent, indicating that service sector prices were relatively lower than during the previous year. Consumer behavior and spending attitudes play a large part in determining the energy consumption trends within the commercial sector. Preliminary data from 1984 indicates that electricity demand growth continues to increase at more than 7.5 percent over the 1983 level. (For additional information contact the Ohio Department of Development, Ohio Data Users Center, Ohio Economic Indicators Quarterly)

OHIO INDUSTRIAL SECTOR ENERGY CONSUMPTION
1960 - 1983

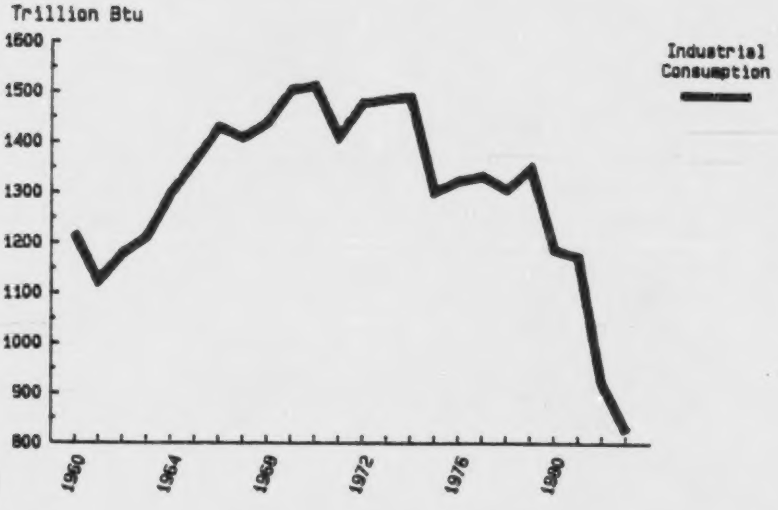


FIGURE 3

Ohio Industrial Consumption

Historically, the industrial sector has been highly energy intensive, relative to the nation. During 1983, as in 1982, Ohio industrial consumption was the lowest per dollar of State product in over two decades. This level now rivals the U.S. proportion of energy consumed within the industrial sector to the gross national product. (See Table 6)

Industrial consumption declined 1.8 percent from 1982, designating 1983 as the lowest level industrial energy consumption in over 25 years. Especially during the past two years, a significant change in Ohio's industrial sector energy consumption patterns has become evident, characterized by a reduction in purchases of utility natural gas and of coal.

In 1983, self help gas, which is Ohio gas directly purchased by an industrial customer, usurped 56 Tbtu of traditionally supplied utility natural gas. (This represents 22 percent of total industrial natural gas consumption.) In addition to self help competition, industrial firms have also sought new means of acquiring energy in an attempt to lower fuel costs. One particular large industrial concern, believed to be one of the largest natural gas consumers in the world, established its own direct purchases from an interstate wholesaler of natural gas with the construction of its own private transportation pipeline.

Due to the economic recession, many firms have drastically reduced or eliminated their demand for natural gas and other energy sources. The Columbia Gas of Ohio and the Cincinnati Gas and Electric Utility Service areas, serving central and southern Ohio respectively, were among the hardest hit relative to their market size. In the northern portion of the State, coal consumption was more severly reduced by market fluctuation. Most notable were the substitution of electric arc furnances for existing coal fired boilers.

Industrial consumption of utility supplied electricity increased 37.3 Tbtu from 1982 to 1983. This represents a 24.6 percent jump in the demand for electricity. A continuation of this trend during the 1984 demand year would result in equal market shares, as measured in Tbtu, for natural gas and electricity. A similar market allocation existed in 1977. (See Tables 15 & 20)

However, the nature of the industrial market has changed dramatically over the past several years. Spurred by the recession and advances in technology, Ohio's industrial base is in the process of shifting from a predominantly heavy metalugical and fabricating center to a less fuel intensive structure expanding in areas such as robotics and communication equipment manufacturing.

Self help natural gas purchases and similar non-traditional fuel procurement practices will continue to play a significant role in determining the energy consumption mix for Ohio's industrial sector. (See Natural Gas Production, Self Help)

1983 was marked by closer industrial consumer price parity between utility supplied natural and refined petroleum products. Price parity is significant, because petroleum and natural gas are alternatively used in multi-fuel boilers in response to price savings. Petroleum fuel use for 1983 comprised approximately 24 percent of total industrial fuel consumption. Petroleum has steadily increased from supplying 14 percent of aggregate industrial energy in 1973 to its present level. However, industrial petroleum consumption declined only slightly, 3.0 percent from 1982 to 1983.

OHIO TRANSPORTATION SECTOR ENERGY CONSUMPTION
1960 - 1983

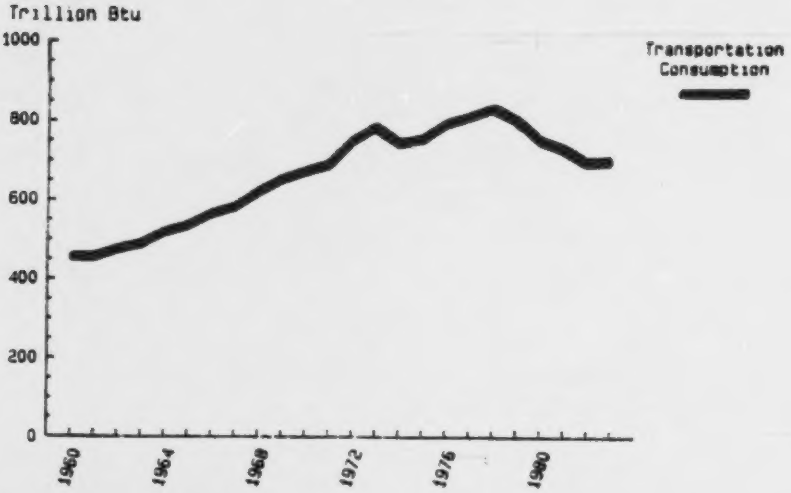


FIGURE 4

Ohio Transportation Sector

Ohio's transportation sector energy consumption has remained relatively unchanged from 1982 to 1983. Historically it appears to be the first lull in consumption decline since the 1978 oil price increase. In 1983, total transport consumption was 690.1 Tbtu; 99.9 percent of this was designated as petroleum motor fuels. In previous years, coal and electricity constituted a large sector of transport fuels. Both natural gas and electricity are still predominantly used for pipeline movement of natural gas. These patterns have remained virtually unchanged over the past decade. (See Table 22)

Wholesale and retail prices of crude petroleum and gasoline decreased in 1983. Overall nominal prices for retail gasoline have fallen near or below 1980 levels. The relationship between price and consumption of motor fuels is clearly observed following the 1973 and 1979 price hikes. Whether the 1982 and 1983 levels present a point of departure, indicating a resurgence in consumption levels or price elasticities, is not clearly discernible at this time. Retail prices of gasoline declined by an approximate five percent from 1982 and 1983, while aggregate petroleum consumption increased less than one percent.

The estimated number of miles traveled annually per household at both the national and Ohio level continue to increase. The average number of miles traveled per household in Ohio has increased more than 20 percent over the past decade, while aggregate gasoline consumption remains at pre-embargo levels. This indicates a more efficient use of Ohio's petroleum motor fuels.

Measured on a per capita basis, Ohio consumption was 64.6 MMBtu per capita. This is nearly 23 percent less than the U.S. average of 83.7 MMBtu per capita for 1983. In dollar value, Ohioans expended over 21 percent less in 1983 on transportation fuels than five years previously.

OHIO ELECTRIC UTILITY ENERGY CONSUMPTION
1960 - 1983

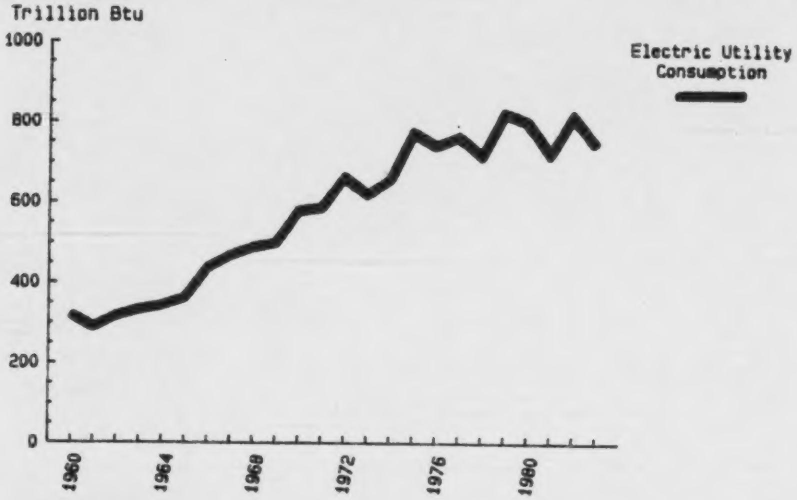


FIGURE 5

Ohio Electric Utility Sector

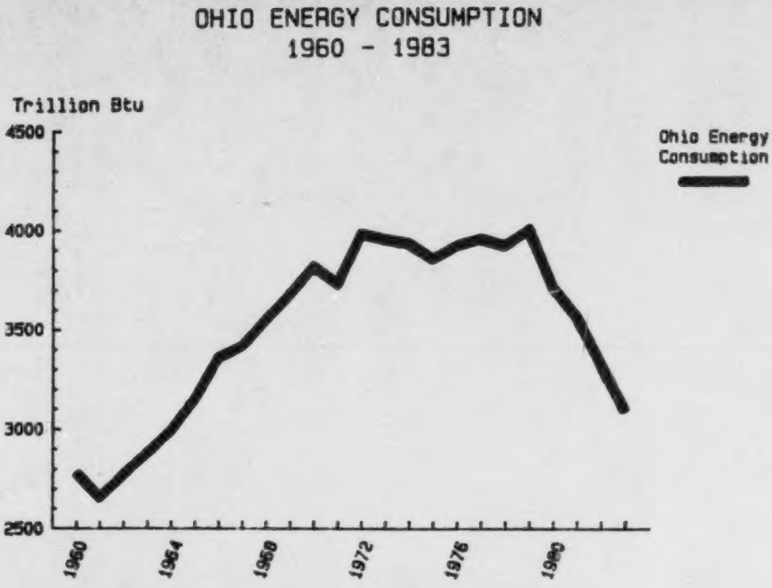
The electric utility sector is composed of publicly and privately owned companies that generate electricity primarily for resale. Over 95 percent of Ohio's electricity in 1983 was generated from coal. This is down from the previous year's 97 percent. Both in Ohio and nationally, utility coal consumption declined from 1443.3 Tbtu in 1982 to 1042.1 Tbtu in 1983. However, 1983 was an important year in that Ohio utilities purchased a larger portion of their coal supplies from Ohio coal producers. (See Production, Coal)

Total electricity generation as reported by the eight major Ohio utilities, increased 8.5 percent from 1982 to 1983. Total end-use consumption of electricity increased by 12.3 percent; while average resale price per megawatt-hour, across sectors and state, declined 3.1 percent.

The net amount of energy required for generation declined 2.2 percent. Nuclear generation of electricity increased. In 1983 Toledo Edison's Davis Besse nuclear plant supplied 9.4 percent of Ohio's electricity, a 200 percent increase over the 3.1 percent in 1982.

Ohio historically has had a higher efficiency ratio for input and output energies. Petroleum consumption declined from 8.9 Tbtu to 1.7 Tbtu, 1982 to 1983. Petroleum is generally used for peaking plants and quick start generator units. A reduction in the amount of petroleum consumed suggests a reduction of peaking plant use and quick starting, both indicators of more efficient and stable generation. Natural gas consumption for similar purposes declined from 2.1 Tbtu in 1982 to nearly zero in 1983. The change in fuel mix is the major factor in the reduction of energy required for generation. In 1983, coal was still the predominant fuel source for generation, but the reduction in petroleum and natural gas, coupled with the increase in nuclear generation, resulted in less Tbtu of energy input for greater net generation of electricity.

For a company by company comparison of cost, generation and prices, the Summary of Electrical Statistics is available from the Division of Energy.

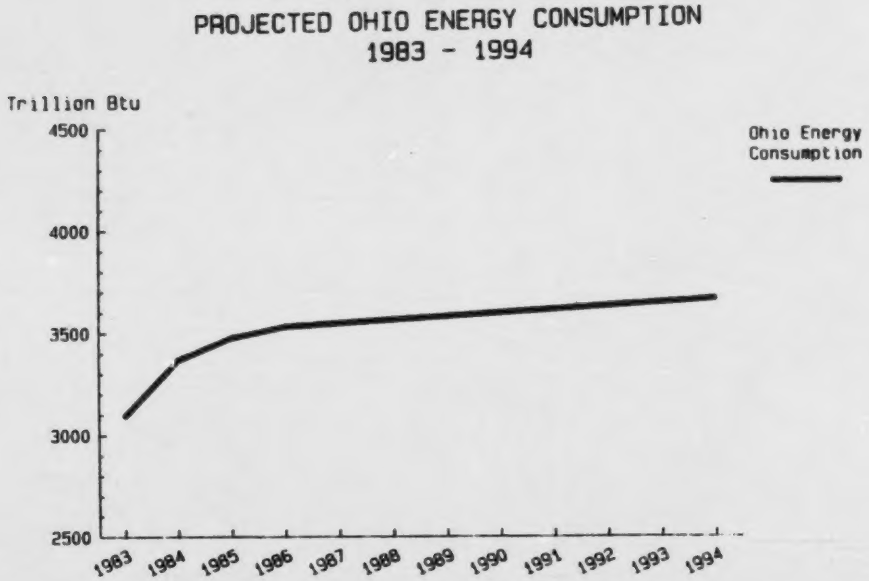


OHIO ENERGY CONSUMPTION
1960 - 1983

FIGURE 6

OUTLOOK: Ohio Energy Consumption, 1983-1994

Ohio in aggregate energy consumption patterns have been closely associated with trends in Gross State Product (GSP), inflation, and fuel prices. Between the years 1962 and 1970, these factors increased along with consumption in a relative and stable manner. During this period, fuel prices remained nominally stable.



PROJECTED OHIO ENERGY CONSUMPTION
1983 - 1994

FIGURE 7

The international economic shocks experienced in the 1970's altered the traditional relationship between consumption and reduction. In Ohio specifically, there has been a significant effort exerted by both the public and private sectors to retain established levels of economic production and simultaneously reduce aggregate energy costs through decreased consumption. The need to reduce the dependence on foreign energy sources, namely petroleum, runs tandem here in Ohio with the desire to depend more directly on Ohio energy resources.

The economic recession of the past decade has severely affected both Ohio and the Midwest. This is most significantly illustrated by a decline in energy consumption and production within the industrial sector and the slow establishment of new businesses and/or expansion of industrial capacity.

The ten year forecasts of sectoral energy and fuel requirements presented in this report are based upon the following assumptions:

1) The post-1979 OPEC recession reached its lower threshold in 1983.

2) Economic recovery will continue through 1986, resulting in lower Ohio unemployment rates.

3) Over the next few years, real GSP will gradually increase to 1979 levels.

4) Real prices of energy for all sectors will remain stable or approximate their 1983-84 levels.

Implicit in assumptions 2) and 4) is the tenet that no severe recessions will occur between 1984 and 1994. Further, the decline in the growth rate of inflation observed in 1982 and 1983 will continue through 1994, despite the current size of the federal deficit.

To what extent the assumptions outlined above are actually realized, depends largely upon the specific fiscal and monetary measures adopted by the federal government in dealing with the problems of the budget deficit, unemployment, and inflation. Since the nature, timing and the net impact of such measures are quite impossible to determine ahead of time, ODOE forecasting models are developed with flexibility to continuously monitor, identify and evaluate emerging macro-economic trends and their net impact upon energy and fuel requirements in Ohio. The model is assumed to have a variance of three percent above or below the levels of sectoral energy and fuel requirements presented in this volume. More detailed analysis of fuel consumption, and supply and demand in the short run are presented in the Short Term Report, available from the Division of Energy.

PROJECTED OHIO RESIDENTIAL ENERGY CONSUMPTION
1983 - 1994

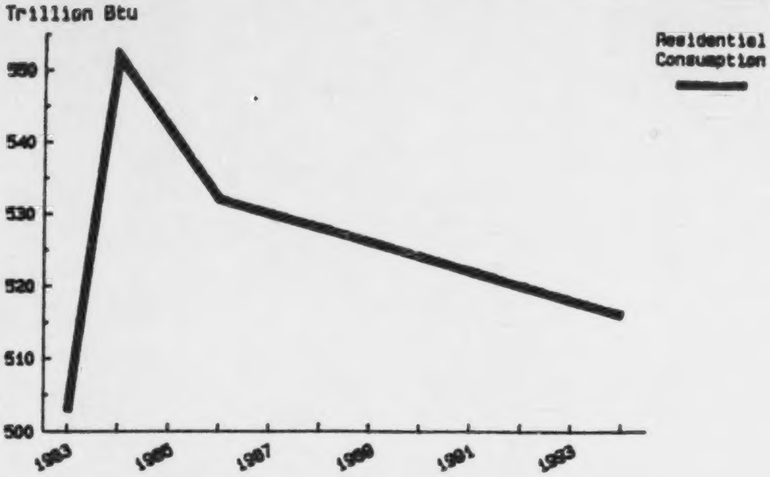


FIGURE 8

The graph of residential consumption for 1983 marks the lowest level of energy consumption since 1960. Demand is forecast to increase to 1963 levels by 1985, after which time it will remain fairly stable through 1994.

PROJECTED OHIO COMMERCIAL ENERGY CONSUMPTION
1983 - 1994

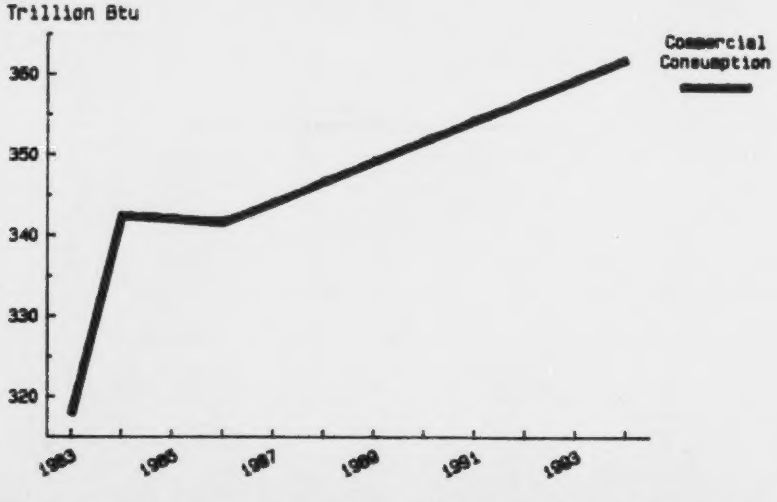


FIGURE 9

Commercial energy consumption has declined since the 1979 recession, and parallels late 1960's levels. Energy demand in the sector is forecast to increase over the next two years. ODOE forecasts a continued increase in commercial demand from 1986 through 1994.

PROJECTED INDUSTRIAL ENERGY CONSUMPTION
1983 - 1994

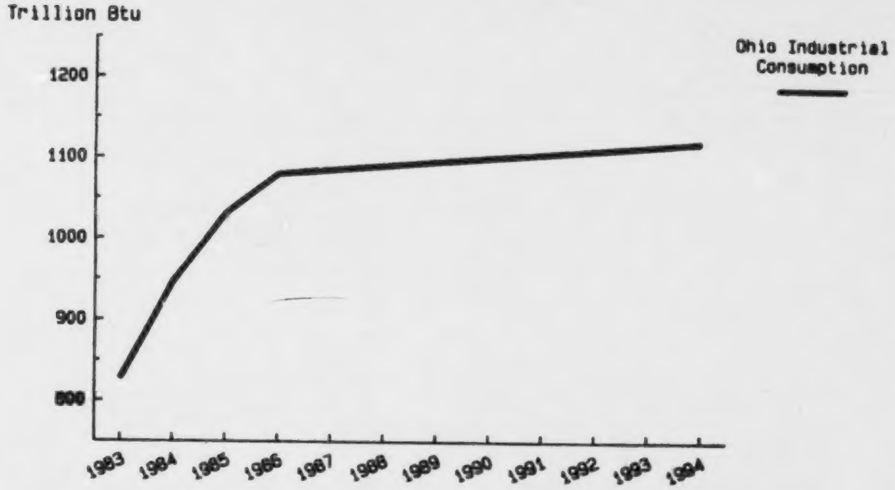


FIGURE 10

The graph of industrial energy consumption presented includes only fuel purchased directly from utilities. In other words, self help natural gas, which represents an additional 38 Tbtu in 1982 and 56 Tbtu in 1983, is not included in total consumption.

Even with self help gas included, industrial energy consumption for 1983 and 1982 are the lowest recorded levels in over two decades. ODOE forecasts an increase in energy consumption corresponding to the anticipated economic recovery. Assuming a three percent variance in the forecast demand, it will be six or more years before industrial consumption levels will approach the 1979 level.

PROJECTED TRANSPORTATION ENERGY CONSUMPTION
1983 - 1994

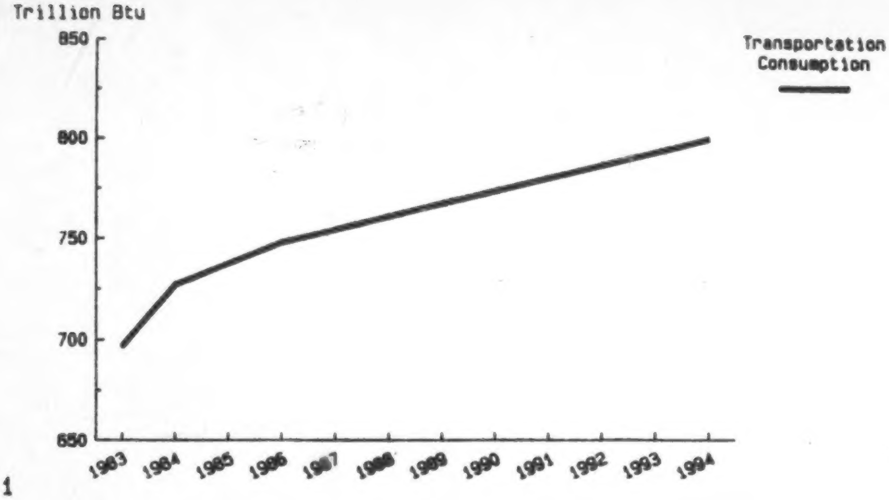


FIGURE 11

A progressive increase in transportation fuel demand is expected over the next decade. The 1984 level of demand, given a continued increase in vehicle miles traveled, should remain below 1978 peak consumption.

Overall, ODOE forecasts a gradual increase in the total annual energy consumption for Ohio, but a continuing decrease in energy use per dollar of GSP. The projected 1994 level of consumption is forecast to be 85 to 90 percent of the late 70's peak levels. This projection of consumption coupled with a relatively constant population and resurgence of Gross State Product underscores the assumption that Ohio is becoming more energy efficient.

OVERVIEW OF OHIO 1983 ENERGY PRODUCTION

Statewide Fuel Production

Ohio's indigenous energy resources - coal, natural gas and crude oil could potentially supply the equivalent of one-half of the state's total energy demand. Increased reliance upon the state's own resources reduces Ohio's vulnerability to external supply or price disruptions. This limit the amounts paid for transportation of fuels, supports reinvestment in our own Ohio industries and creates Ohio jobs, keeping energy dollars within the state for support of local economies.

In 1983, Ohio fuels provided the equivalent of 33.4 percent of total state energy demand, slightly less than the 34.9 percent in 1982. Despite increases in both natural gas and crude oil production, a 5.7 million ton drop in Ohio coal production accounts for the aggregate decline. Alternative and renewable energy sources provided less than 0.1 percent. Altogether, in 1983, Ohio produced fuels were valued at $2.0 billion and accounted for about 20,000 Ohio jobs.

Historically, Ohio fuels have provided the equivalent of 30 to 40 percent of total energy consumption. Several factors combine to keep this contribution below the theoretical maximum:

- Environmental quality concerns keep Ohio's high sulfur coal from providing 100 percent of the state's demand. In 1983, Ohio produced coal accounted for only about 59 percent of total use.

- A lack of available transmission services are keeping natural gas deliveries from Ohio wells to industrial concerns at three to five percent less than possible.

- Ohio crude oil is more suitable for refining into lubricants instead of gasoline and is somewhat constrained by limits on natural gas transmission, since both are often produced from the same wells.

- Alternative, renewable, and consumer controlled Ohio energy sources are only beginning to contribute significantly to the State's overall energy supply.

Ohio Coal Production

Ohio is both a major coal consuming and producing state. In 1983, Ohioans used 56.4 million tons of coal, while producing 33.2 million tons. Ohio coal production was the equivalent of 59 percent of consumption in 1983. The value of this Ohio coal at the minemouth was approximately $1.1 billion. Coal production is a vital component of Ohio's economy; the Ohio coal industry has nearly 9,500 employees in 24 Ohio counties. (See Figure 16)

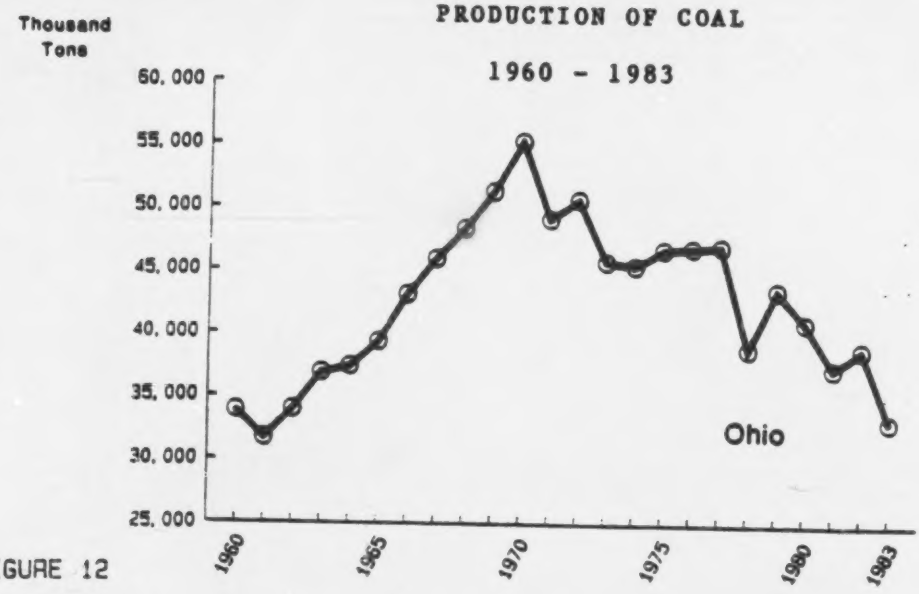


FIGURE 12

Productivity from Ohio coal mines is now increasing after several years of decline. In 1980, 162 miners were required to produce one million tons of coal from a surface mine and 380 miners per one million tons from underground. In 1983, these production rates were 149 and 284 respectively. Continued increases in productivity and the associated lowering of production costs will enhance the competitive minemouth price of Ohio coal.

Nevertheless, Ohio coal production reached its lowest point in 20 years during 1983. From peak production in 1970 of 55.1 million tons, Ohio coal production has eroded steadily to its present level. Ohio coal has lost nearly one-fourth of its out-of-state market since 1977 as a result of its high sulfur content. When in-state sales reductions are included, 80 percent of the overall decline in Ohio coal markets can be attributed to the electric utility sector.

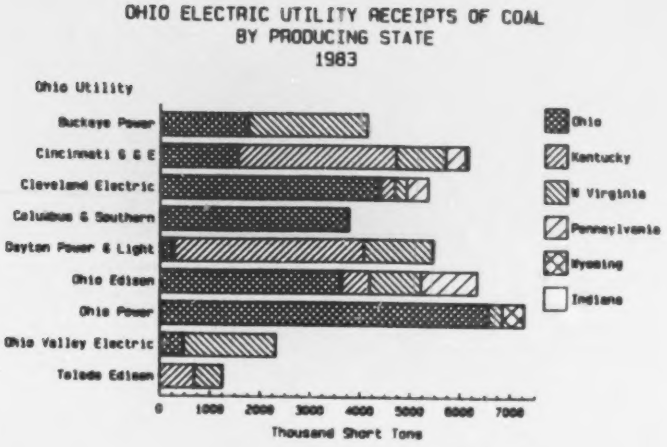


FIGURE 13

Most Ohio coal is used in Ohio and for electricity generation. Several Ohio utilities are primarily dependent upon Ohio coal, including Columbus and Southern Ohio Electric Company which burns 100 percent of Ohio coal. On the positive side, the proportion of coal consumed by Ohio utilities which was produced in Ohio, increased from 48 to 53 percent in 1983. Therefore, despite the decline in production, Ohio coal provided a somewhat greater share of the state's total 1983 consumption. (See Table 14)

However, Ohio continues to be a net importer of coal. A general lack of cost effective commercial scale sulfur removal technologies, capable of cleaning high sulfur Ohio coals to an environmentally acceptable level, has resulted in a growing dependence upon lower sulfur coal supplies imported principally from West Virginia and Eastern Kentucky. Toledo Edison, for example, is completely dependent upon such out-of-state low sulfur coals. Western low sulfur coal deliveries, which reached their peak of 4.8 million tons in 1977, ceased altogether in late 1983.

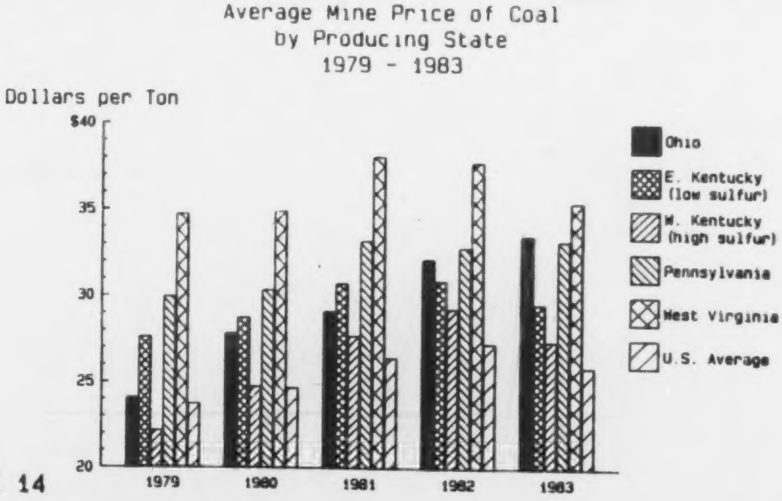


FIGURE 14

The reestablishment of Ohio coal's markets is entirely dependent upon the development and cost effectively commercial availability of technologies which will efficiently and economically reduce sulfur oxide emissions. Such technologies include, but are not limited to, pre-combustion removal of sulfur from the raw coal, removal of sulfur during combustion, and removal of sulfur oxides from flue gasses. Technology advancements will significantly determine the upper and lower bounds of Ohio coal markets in the late 1980's and the 1990's.

Recognizing the appropriate role for State Government in this development process, the Ohio Coal Development Office has been established within the Department of Development, Division of Energy to promote the commercialization of clean Ohio coal use technologies. The Coal Development Office works jointly with public-private partnerships to bring available technologies to full scale demonstration. In the past year, the Coal Development Office has co-sponsored eight Ohio coal projects with private sector and electric utility participants. The purposes and the current programs of the Coal Development Office are summarized in Table 13. More complete information regarding the Office's objectives and activities are listed in the Ohio Coal Development Agenda, available from the Division of Energy.

Public and private ventures are underway. Ohio utilities themselves have invested billions of dollars to date for environmental quality control (See Table 18). The Ohio Air Quality and Water Development Authorities, the Ohio Environmental Protection Agency, coal miners, producers, users, and environmental equipment manufacturers are each participants in sulfur removal projects.

These vigorous public-private coal market development efforts are designed to reverse the recent downward trends in Ohio coal production and sales. Ohio's coal interests recently joined to retain the 1.5 million tons of Ohio coal sales per year to a Consumer Power generation station in Michigan. This reprieve will permit sales to continue as clean coal technologies are brought into commercial availability.

The future of Ohio coal looks somewhat better than it has for some time. Planning is already underway to assure consideration of Ohio coal for State facilities slated for boiler replacement or renovation. Potential conversion and operation of the Zimmer Power Plant on Ohio coal will expand future demand by nearly 3.5 million tons annually. Already, preliminary data for 1984 show a significant increase in Ohio coal purchases over 1983. Concerted efforts by the State of Ohio coal interests should result in a continuation of this trend.

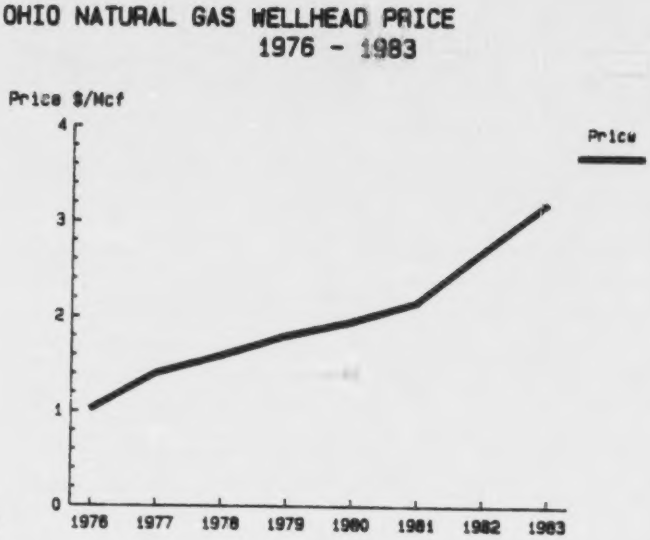


FIGURE 15

Ohio Natural Gas Production

Ohioans consumed 11 percent less natural gas in 1983 than in the previous year. Nevertheless, total production of natural gas from Ohio's reserves rose significantly for the sixth consecutive year. In-state production of 151.3 billion cubic feet (Bcf) was the equivalent of 21.5 percent of total Ohio gas consumption. This gas had a wellhead value of nearly $500 million.

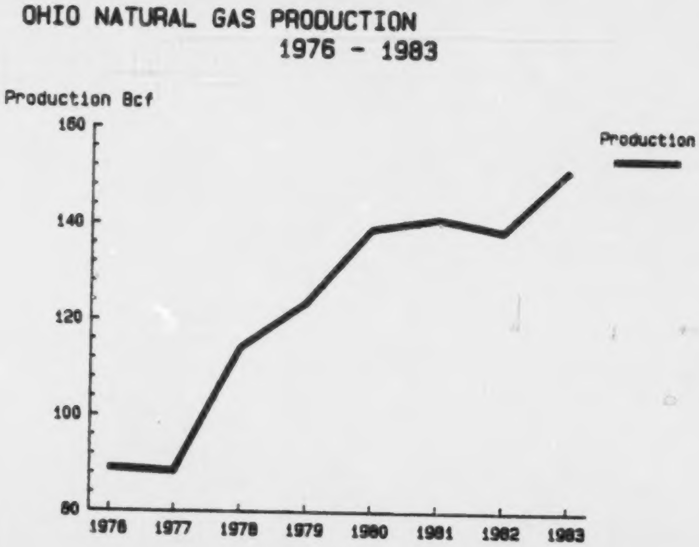


FIGURE 16

In 1979, the quantity of Ohio gas produced was the equivalent of 13.0 percent of our total consumption as compared to the 21.5 percent in 1983. While it is generally agreed that Ohio-produced gas cannot provide much more than 25 percent of total State demand, the data shows that we are rapidly approaching this optimus. The combination of reduced demand and increased Ohio gas production over the past five years, has made Ohio gas consumers significantly less vulnerable to supply or price disruption.

Production and distribution of Ohio's natural gas have been profoundly influenced by three recent and significant changes in the gas market:

1) Rising utility gas prices reached, and often exceeded, the delivered price of fuel oil products which could be used by industrial customers in lieu of gas;

2) Industrial customers, seeking lower gas prices, began to take advantage of the self help gas program to avail themselves of cheaper gas at the wellhead; and

3) Reduced demand, triggered by the recession and higher gas prices, led to a temporary glut of interstate natural gas supplies, forcing changes in gas procurement practices.

Of somewhat less importance, is the January, 1985 decontrol of many federally regulated wellhead gas prices. In anticipation of and concern for the effects of this deregulation, some minor changes in normal gas market operations has occurred.

Self Help Gas

Ohio's natural gas markets changed significantly with an astronomical rise in the volumes of self help gas consumed in the industrial sector. The State's self help program began in 1974 as a means for industrial gas consumers to avoid gas supply

ESTIMATED OHIO INDUSTRIAL GAS CONSUMPTION
BY SOURCE, 1978 - 1983.

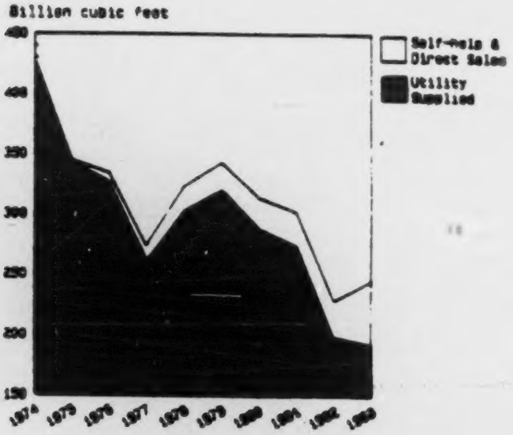


FIGURE 17

curtailments. Industrial concerns can purchase their own gas at the wellhead and have it transported by a gas distribution company directly to their specified location. The program was used extensively during the severest curtailment period of the late 1970s.

As utility natural gas prices continued to rise, Ohio industries began to see directly purchased self help gas as an opportunity for lower priced supplies than their gas utility. Table 21 shows 1983 self help volumes in the East Ohio Gas (EOG) and Columbus Gas of Ohio (COH) service areas. In fact, total self help deliveries would have been even greater had not a lack of pipeline transmission capability been a constraining factor.

The availability of self help gas in Ohio has emerged as a vital resource in the economic development of the State. Self help volumes, being a less expensive source of natural gas supply, improve the competitive position of participating industries. Ohio gas companies, and their customers, receive the benefits of transportation charges, set by the PUCO, which cover the costs of transmission service. Self help demand provides an additional market for Ohio gas producers and adds competition to both the wellhead and the burner tip prices.

In 1984, self help deliveries are being constrained again by physical transmission capability. Nevertheless, it will improve to be a substantial market segment, as most distribution companies are predicting a slight increase in total deliveries. When added to industrial consumer volumes delivered by utilities under Fuel Oil Displacement or Special Marketing Programs, standard distribution company tariff sales will comprise only 60 to 70 percent of all industrial consumption over the next few years. By contrast, in 1974 the standard tariff sales comprised virtually 100 percent of all sales.

Ohio Gas Distribution Company Supplies

Most Ohio gas consumers are served by one of eight major gas distribution utilities. The State also has 21 smaller gas utilities and six municipal gas systems. In 1983, approximately 78 percent of the gas resold by these companies was purchased from an interstate gas pipeline. Table 3 shows the relative percentage purchases from each of these interstates.

Ohio distribution companies purchased approximately 8.5 percent of their supplies from Ohio producers in 1983. This represents a 24 percent increase in direct Ohio gas purchases from the previous year.

Synthetic natural gas (SNG), produced by Columbia LNG Corporation at Green Springs, Ohio, has been a source of supply for several Ohio distribution companies since the mid 1970s, principally Cincinnati Gas & Electric, Columbia Gas of Ohio, Dayton Power & Light, and West Ohio Gas. Historically, SNG has accounted for less than four percent of total state gas supply. In 1983, it was about five percent.

Natural gas supply prices, which have shown extreme upward volatility over the past three years, now appear to be moderating. Estimates provided DOE by Ohio distribution companies in early 1984, pegged the average price of their purchased gas at about $4.50 per thousand cubic feet (mcf). Some interstate pipelines have announced or implemented price reductions however, and current aggregate prices are likely to be somewhat lower. Prices for Ohio produced gas are consistently reported to be less than those for interstate pipeline supplies. In total, the state's 1983 purchased gas costs are estimated to have exceeded $3 billion.

TABLE 3 **OHIO INTERSTATE PIPELINE SUPPLIERS**
1983

PIPELINE	PERCENT OF TOTAL SUPPLY
COLUMBIA GAS TRANSMISSION	42.0
CONSOLIDATED GAS	23.8
PANHANDLE EASTERN	7.6
LAWRENCEBURG	2.0
ALL OHTERS	1.3

Additional information on specific Ohio distribution company supply sources is available in DOE's publication, Summary of Natural Gas Statistics.

Ohio Oil Production

Ohio crude oil production rose to a record 14.97 million barrels in 1983, an increase of 2.7 percent over the previous year. This Pennsylvania Grade Crude is primarily refined into lubricating oils.

Oil and gas are often produced from the same combination wells in Ohio. About six out of every ten wells drilled in 1983 were combination wells. In all, a record 6,260 drilling operations were reported to the Ohio Department of Natural Resources during 1983. Of these over 93 percent were productive wells.

OHIO CRUDE OIL WELLHEAD PRICE
1976 - 1983

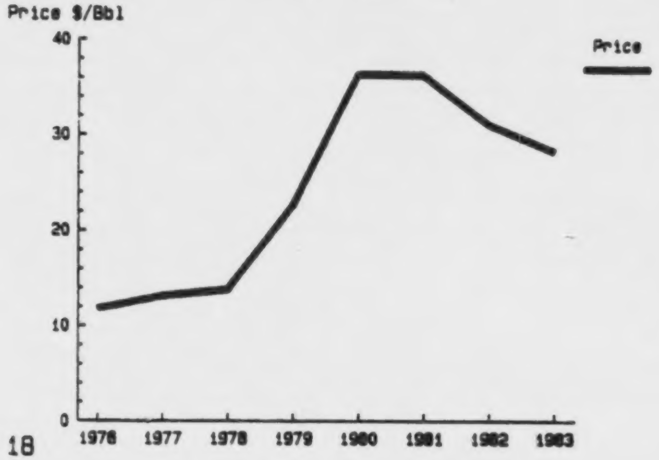


FIGURE 18

The 1983 crude oil market was characterized by moderating prices. The significant price increase of recent years was reversed as oil production exceeded demand, and the conservation dampended demand. This decrease in the real price of oil in the world market affected prices at Ohio wellheads as well. The average price per barrel in 1983 was $28.15, a nine percent decrease from the previous year. Ohio prices generally move in tandem with world prices.

Alternative Energy Resources

The use of Ohio's renewable energy fuels; solar, wind, hydrothermal, wood, alcohol, and other agricultural products, composed an estimated 65 trillion BTU of available energy. This can be equated to two percent of the energy consumed during 1983. Despite the significant increase in consumption since 1972, Ohio's renewable energy industry has been particularly depressed by recent economic recessions.

The number of passive solar installations declined in 1982, recovering in 1983 along with the housing industry. Retrofitting and add-on spaces are the continuing trend as homeowners improve rather than replace current housing stock. Though tax credits for solar installations still exist a 1982 Internal Revenue Service ruling abolished federal credits for hydrothermal or ground water heating systems. Subsequently, a recovery of $7 million in claimed tax credits, plus penalties and interest from Ohioans, has depressed sales and installation of hydro and geothermal systems.

Photovoltaics and wind energy projects have also been significantly effected by the recession in the economy as have the amount of monies available for research in alternative energy resources.

Biomass

Ohio's industrial tax credit has encouraged the utilization of waste heat recovery and cogeneration. Eight major industiral firms in Ohio use biomass energy resources directly. Of these, Mead Paper and Stone Container Corporation have installed wood boilers to provide supplemental or primary power for their systems.

In 1983, the U.S. Department of Energy established a biomass energy program. Ohio joined with other states in the Council of Great Lakes Governors to establish a program more suitable for the midwest. Ohio has plentiful agricultural and forestry resources which can be burned directly or converted into alcohol, methane, or other derived energy products. Consequently, in 1983 the Ohio Division of Energy initiated an in-depth resources assessment of Ohio's biomass. The technique employed, included computer anlaysis of satellite generated data, and ground verification which characterized and quantified the extent of wood and agricultural resources of the state.

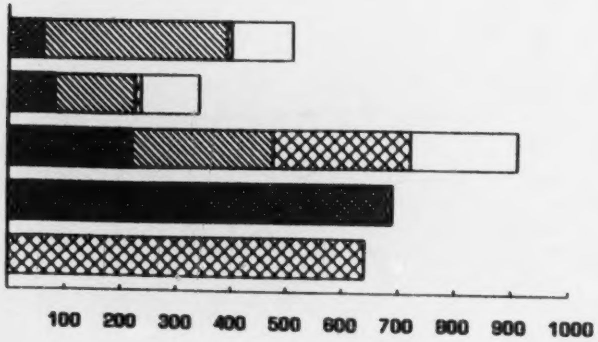
This Ohio program was instrumental in establishing the biomass supply available for a proposed 10 million gallon wood-to-ethanol conversion plant in Southeastern Ohio. The Division maintains area maps which delineated the average tons per acre, the type, density, and biomass/alcohol conversion factors to estimate supply.

Aggregate alcohol production increased in 1983 as the 60 million gallon Ashland owned South Point Ethanol plant operated its first full year. The proposed 10 million gallon wood-to-ethanol conversion project continues with groundbreaking expected in 1985, and full production in 1986. However, major alcohol production remains a slow growth industry partly due to the large capital investment requirements.

TABLE 4 GROSS ENERGY CONSUMPTION BY FUEL
(TRILLION BTU)
1978 - 1983

	1978	1979	1980	1981	1982	1983
COAL						
MILLION SHORT TONS	68.0	72.8	67.3	64.1	62.2	56.4
TRILLION BTU	1543.4	1677.2	1576.2	1501.7	1443.3	1308.6
% OF TOTAL	39.5%	42.0%	42.6%	42.3%	43.4%	42.3%
PETROLEUM						
MILLION BARRELS	260.3	231.7	213.7	201.9	195.2	190.4
TRILLION BTU	1384.8	1322.7	1195.2	1135.2	1072.8	1061.1
% OF TOTAL	35.4%	33.1%	32.3%	32.0%	32.3%	34.3%
NATURAL GAS						
BILLION Cu. Ft.	930.3	936.2	880.2	844.8	754.3	704.2
TRILLION BTU	960.1	966.2	908.4	871.8	778.4	726.7
% OF TOTAL	24.5%	24.2%	24.6%	24.6%	23.4%	23.5%
NUCLEAR & HYDRO						
BILLION KWh	2.4	3.2	2.1	4.4	3.2	4.9
TRILLION BTU	22.6	28.5	19.1	39.7	29.1	44.5
% OF TOTAL	0.6%	0.7%	0.5%	1.1%	0.9%	1.4%
TOTAL GROSS ENERGY CONSUMPTION (TRILLION BTU)	3910.9	3994.6	3698.9	3548.4	3323.6	3140.9

TABLE 5 CONSUMPTION BY END-USE SECTOR AND ENERGY SOURCE (THOUSAND BTU)



THOUSAND BTU

	PETROLEUM ▩	NATURAL GAS ▨	COAL ⊠	ELECTRICITY ☐	TOTAL
RESIDENTIAL	62.4	329.2	9.2	109.6	510.5
COMMERCIAL	84.6	143.6	10.5	103.8	342.4
INDUSTRIAL	221.7	253.9	246.8	189.1	911.5
TRANSPORTATION	690.7				690.7
ELECTRIC UTILITY	1.7		1042.1	-402.5	641.3
TOTALS	1061.1	726.7	1308.6		3096.4

PER CAPITA ENERGY CONSUMPTION
MILLION BTU

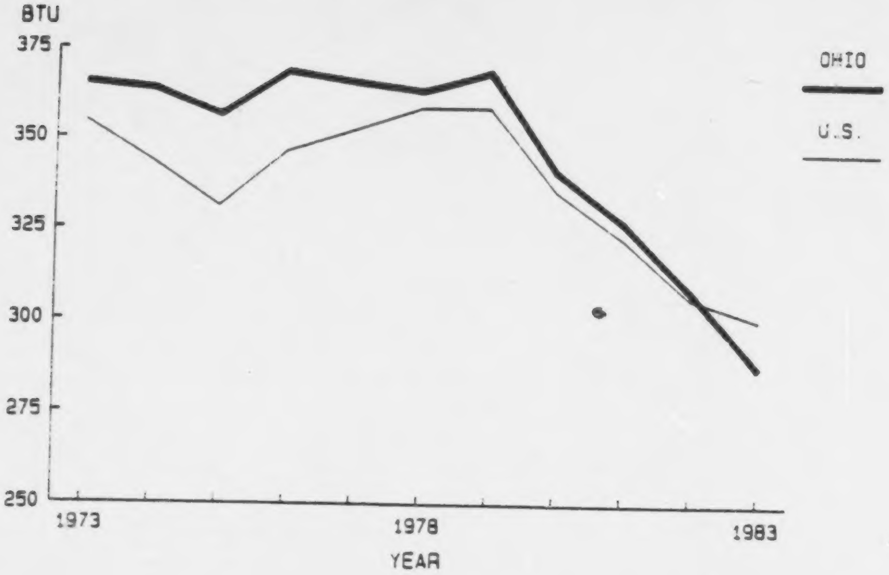


FIGURE 19

TABLE 6 ENERGY CONSUMPTION PER CAPITA MILLION BTU

	OHIO	U.S.
1973	365.5	354.6
1974	363.6	343.4
1975	356.3	331.0
1976	368.3	346.2
1977	365.0	351.9
1978	362.3	357.8
1979	367.6	357.7
1980	340.4	335.1
1981	326.7	322.3
1982	308.0	306.0
1983	291.4	300.1

TABLE 7 ENERGY USE TO GROSS STATE AND NATIONAL PRODUCTS, OHIO AND U.S. 1973 - 1983

(Constant 1972 Dollars)

	OHIO				U.S.			
	GROSS STATE PRODUCT ($B)	ENERGY USE (TBtu)	BTU PER DOLLAR GSP	PERCENT CHANGE	GROSS NATIONAL PRODUCT ($B)	ENERGY USE (TBtu)	BTU PER DOLLAR GNP	PERCENT CHANGE
1973	$64.08	3.935	61.41		$1,255	74.609	59.45	
1974	$62.72	3.914	62.41	1.6%	$1,248	72.758	58.30	-1.9%
1975	$59.98	3.837	63.97	2.5%	$1,234	70.707	57.30	-1.7%
1976	$63.66	3.960	62.21	-2.8%	$1,300	74.510	57.32	nil
1977	$67.13	3.931	58.56	-5.9%	$1,372	76.332	55.64	-2.9%
1978	$69.95	3.911	55.91	-4.5%	$1,437	78.175	54.40	-2.2%
1979	$70.78	3.969	56.07	0.3%	$1,483	78.910	53.21	-2.2%
1980	$66.97	3.676	54.89	-2.1%	$1,481	75.988	51.31	-3.6%
1981	$66.86	3.523	52.69	-4.0%	$1,510	73.984	49.00	-4.5%
1982	$63.92	3.323	51.99	-1.3%	$1,485	70.822	47.69	-2.7%
1983	$63.62	3.096	48.66	-6.4%	$1,535	70.638	46.02	-3.5%

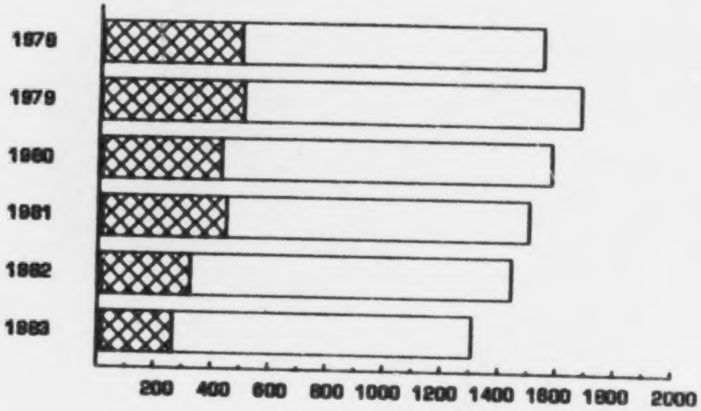
TABLE 8 RATIO OF INDUSTRIAL ENERGY USE TO GROSS PRODUCT DOLLAR

(Thousand Btu)

	1978	1979	1980	1981	1982	1983
OHIO	1.87	1.91	1.77	1.75	1.45	1.43
U.S.	1.73	1.54	1.43	1.31	1.35	1.89

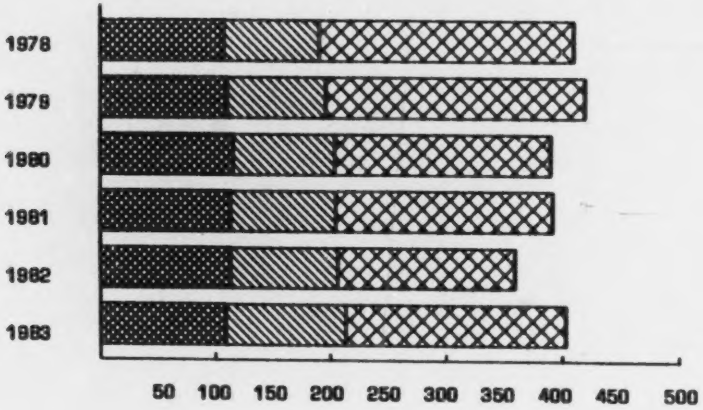
TABLE 9

COAL CONSUMPTION BY END-USE SECTOR
THOUSAND BTU



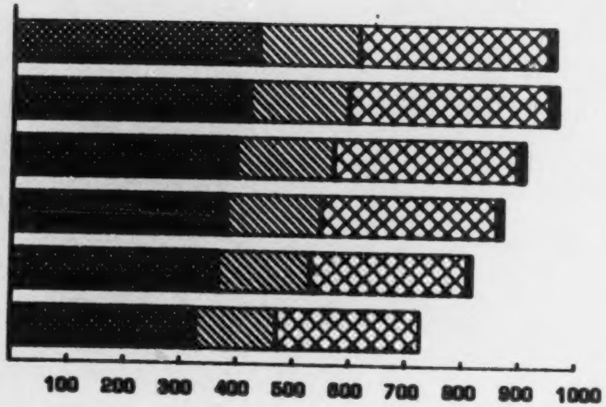
RESIDENTIAL	COMMERCIAL	INDUSTRIAL	ELECTRIC UTILITY	TOTAL
▩	▧	☒	□	
6.2	3.4	484.4	1049.5	1543.5
4.8	2.4	496.9	1173.2	1677.3
8.5	4.5	415.5	1147.7	1576.2
10.7	5.8	432.7	1052.6	1501.8
10.9	5.9	309.8	1116.8	1443.4
9.2	10.5	246.8	1042.1	1308.6

TABLE 10 ELECTRICITY CONSUMPTION BY END-USE SECTOR THROUGH 1983



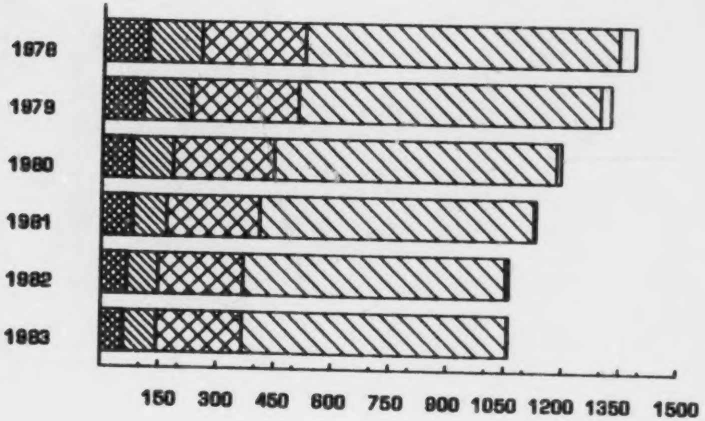
RESIDENTIAL	COMMERCIAL	INDUSTRIAL	TRANSPORTATION	TOTAL
▩	▨	⊠	☐	
108.3	82.2	218.4	0.2	409.9
110.8	85.3	222.3	0.2	418.6
115.5	88.4	185.1	0.1	389.1
114.0	90.9	185.9	0.2	391.0
113.8	92.6	151.8	0.2	358.3
109.5	103.8	189.1	0.2	402.5

TABLE 11 NATURAL GAS CONSUMPTION BY END-USE SECTOR
THOUSAND BTU



RESIDENTIAL	COMMERCIAL	INDUSTRIAL	TRANSPORTATION	ELECTRIC UTILITY	TOTAL
▩	▧	☒	▨	☐	
434.9	177.9	334.8	9.2	3.2	960.1
419.0	177.4	354.9	8.7	6.1	966.1
397.8	172.9	324.6	8.3	4.8	908.4
381.7	168.3	311.4	8.3	2.1	871.8
367.9	164.3	278.5	5.6	2.1	818.4
329.2	143.6	253.9	0	0	726.7

TABLE 12 PETROLEUM CONSUMPTION BY END-USE SECTOR
THOUSAND BTU

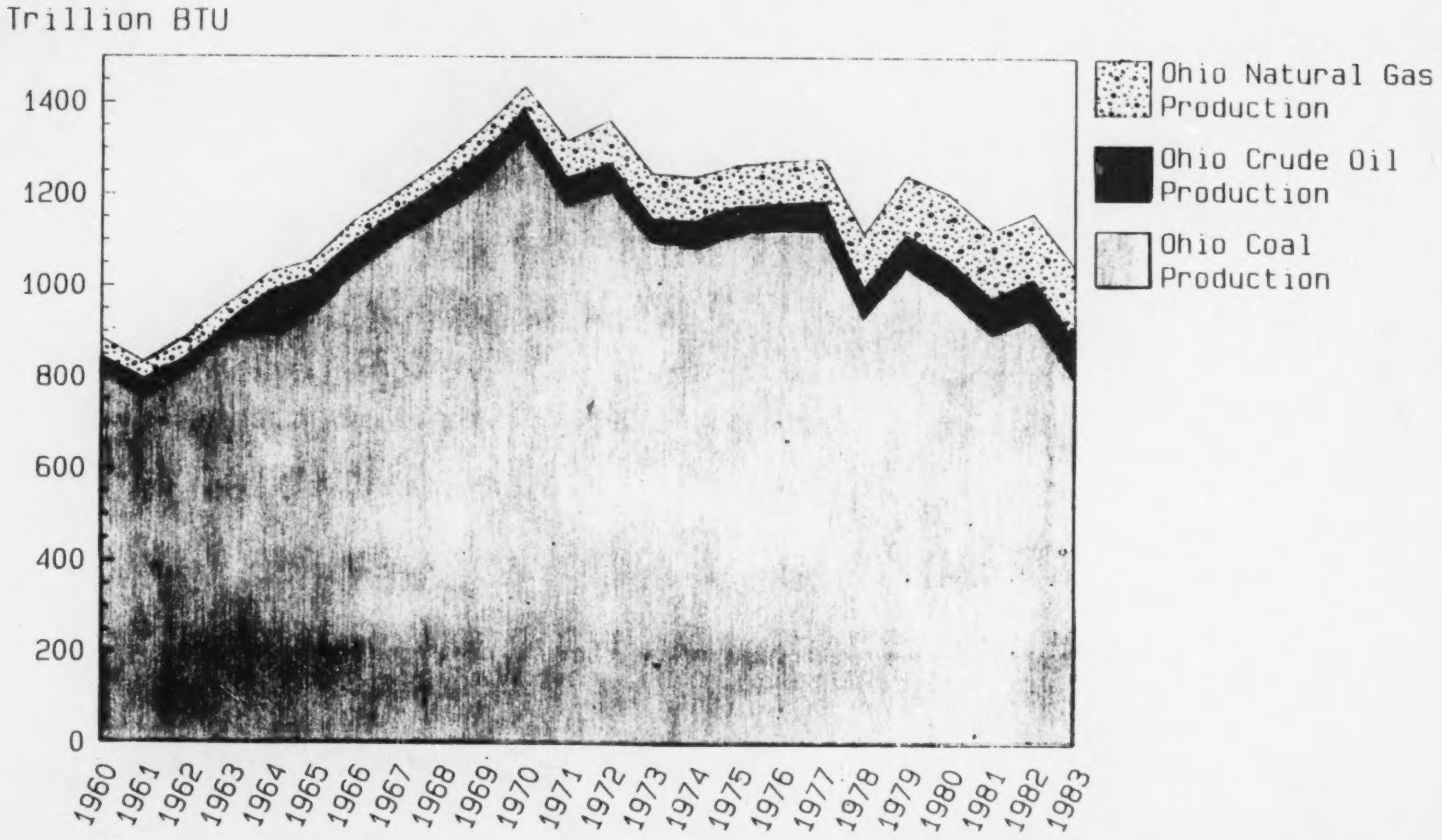


RESIDENTIAL	COMMERCIAL	INDUSTRIAL	TRANSPORTATION	ELECTRIC UTILITY	TOTAL
▦	▧	☒	⧄	□	
120.0	136.8	268.6	816.9	42.4	1384.7
106.5	123.3	277.7	786.5	28.7	1322.7
81.8	104.9	261.5	735.5	11.5	1195.2
84.2	88.2	241.4	715.2	6.2	1135.2
69.6	81.2	220.3	684.4	8.9	1064.5
62.4	84.6	221.7	690.7	1.7	1061.1

TABLE 13 OHIO ENERGY PRODUCTION AND CONSUMPTION BALANCE SHEET, 1960 - 1983

Year	Coal Production (Short Tons)	Crude Oil Production (000 Bbls)	Natural Gas Production (Mmcf)	Total Ohio Production (Trillion Btu)	Total Ohio Consumption (Trillion Btu)	Percent Ohio Production
1960	33,896,497	5,405	36,074	882.20	2,770.69	31.8%
1961	31,733,741	5,639	36,423	832.01	2,642.50	31.5%
1962	34,010,824	5,835	36,747	888.14	2,761.26	32.2%
1963	36,916,741	6,039	36,817	959.13	2,871.10	33.4%
1964	37,390,478	15,859	37,106	1,027.76	2,883.62	35.6%
1965	39,331,560	12,908	35,684	1,055.76	3,141.02	33.6%
1966	43,068,447	10,899	43,133	1,141.50	3,351.15	34.1%
1967	45,891,615	9,924	41,315	1,201.72	3,408.10	35.3%
1968	48,286,873	11,204	42,673	1,268.03	3,540.25	35.8%
1969	51,193,028	10,972	49,793	1,343.81	3,666.63	36.6%
1970	55,136,699	9,864	52,113	1,434.43	3,805.84	37.7%
1971	49,017,000	9,670	79,903	1,315.19	3,714.74	35.4%
1972	50,572,000	9,358	89,995	1,361.15	3,967.49	34.3%
1973	45,666,000	8,796	93,610	1,243.89	3,935.12	31.6%
1974	45,352,000	9,088	92,055	1,236.44	3,914.66	31.6%
1975	46,667,300	9,578	84,960	1,263.50	3,837.45	32.9%
1976	46,804,000	9,994	88,891	1,273.26	3,917.49	32.5%
1977	46,940,000	10,359	88,327	1,278.06	3,951.36	32.3%
1978	38,840,000	11,154	114,098	1,114.94	3,910.89	28.5%
1979	43,528,000	11,953	123,481	1,241.80	3,994.60	31.1%
1980	40,951,000	12,928	138,856	1,201.52	3,698.90	32.5%
1981	37,342,000	13,551	141,134	1,120.88	3,548.40	31.6%
1982	38,883,000	14,571	138,391	1,160.94	3,323.60	34.9%
1983	33,216,630	14,971	151,300	1,040.63	3,140.90	33.1%

OHIO ENERGY PRODUCTION, 1960 - 1983



PURPOSES, PROGRAMS, AND PROJECTS OF THE OHIO COAL DEVELOPMENT OFFICE

PURPOSES

A. Support siting, financing, construction and operation of commercial scale facilities to produce, beneficiate, market, or use Ohio coal.

B. Support market acceptance of Ohio coal through technology and market development.

C. Assist in coal development facility financing.

D. Encourage use of Ohio coal in State facilities and at Ohio electric utility plants.

E. Improve environmental quality through cleaner use of Ohio coal.

F. Assist all public and private sector coal interests in Ohio coal development activities.

PROGRAMS	PROJECTS
A. Development of commercial scale technologies for clean use of Ohio coal in electric utilities	1. Advanced Energy Dynamics electrocstatic cleaning. 2. Coal Gas, Inc. high level sulfur removal. 3. Babcock & Wilcox LIMB demonstration.
B. Development of commercial scale technologies for clean use of Ohio coal in industry and State facilities.	1. TRW advanced coal combustor demonstration. 2. Analysis of ability to revive fluidized bed boiler demo at Columbus Hospital. 3. Capital improvements budget coal boiler projects.
C. Conversion of Ohio coal to alternative clean fuel forms.	1. Battelle catalytic cleaning via coal gasification. 2. Marketing assistance to coal water slurry projects.
D. Enhancement of efficient Ohio production and coal cleaning techniques and technologies.	1. Ohio Automation software for efficient blasting. 2. Lorain Port Authority regional coal blending plan. 3. Accelerated coal washing upgrades/installations.
E. Development of historic and new markets for Ohio coal.	1. Ontario Ohio use of Ohio coal for Canada synfuels. 2. Establishment of coal boiler/user database. 3. Computer matching of Ohio coal to user specs.
F. Assist in the financing of Ohio coal development projects.	1. Coordination of financing with OAQDA, OWDA. 2. Establish procedures for rate of return recovery.
G. Encourage public and private sector joint participation in Ohio coal development projects.	1. Intensified search for nationally sponsored Ohio coal development projects. 2. Joint project planning with private sponsors.

TABLE 15 OHIO COAL USE BY SOURCE
1970 - 1983

(Thousand Short Tons)

	OHIO COAL USE		COAL IMPORTED FROM OTHER STATES			TOTAL IN-STATE COAL USE
	IN-STATE	EXPORTED	EASTERN	WESTERN	TOTAL	
1970	35,553	19,584	31,822	0	31,822	67,375
1971	33,603	15,414	29,513	0	29,513	63,116
1972	35,130	15,422	32,665	0	32,665	67,795
1973	33,409	12,257	32,348	0	32,348	65,557
1974	33,044	12,308	35,426	1,172	36,598	69,642
1975	33,468	13,205	33,118	1,433	34,551	68,019
1976	35,401	11,403	32,191	3,372	35,563	70,964
1977	36,420	10,700	33,051	4,841	37,892	74,132
1978	30,707	6,133	32,504	4,700	37,204	67,912
1979	32,059	11,619	36,908	3,838	40,746	72,804
1980	29,360	9,923	35,357	2,484	37,841	67,201
1981	28,400	9,139	32,925	2,811	35,736	64,136
1982	27,003	8,580	33,367	1,829	35,196	62,199
1983	26,529	8,332	29,491	382	29,873	56,402

TABLE 16 INVENTORY OF CURRENT OHIO POWER PLANTS

Company	Plant Name	City	State	Units	Fuel	Mode	Summer Capacity	Winter Capacity	Jointly Owned
BUCKEYE POWER	CARDINAL	BRILLIANT	OHIO	2-3	COAL	ST	1215	1230	N
CINCINNATI GAS & ELEC	EAST BEND	BOONE CO	KY	2	COAL	ST	414	414	Y
CINCINNATI GAS & ELEC	MIAMI FORT	NORTH BEND	OHIO	5-8	COAL	ST	883	883	N
CINCINNATI GAS & ELEC	MIAMI FORT	NORTH BEND	OHIO	1-6GT	OIL	GT	152.8	207	N
CINCINNATI GAS & ELEC	WC BECKJORD	NEW RICHMOND	OHIO	1-6	COAL	ST	859.2	861.5	N
CINCINNATI GAS & ELEC	WC BECKJORD	NEW RICHMOND	OHIO	1-4GT	OIL	GT	186.4	244.8	N
CINCINNATI GAS & ELEC	DICKS CREEK	MIDDLE TOWN	OHIO	1-5	OIL	GT	136.2	172.3	N
CINCINNATI GAS & ELEC	JM STUART	ABERDEEN	OHIO	1-4	COAL	ST	912.4	912.4	Y
CINCINNATI GAS & ELEC	CONESVILLE	COSHOCTON	OHIO	4	COAL	ST	320	288	Y
CINCINNATI GAS & ELEC	KILLEN	WEST UNION	OHIO	2	COAL	ST	198	198	Y
CLEVELAND ELEC ILL	ASHTABULA	ASHTABULA	OHIO	5-9	COAL	ST	427	432	N
CLEVELAND ELEC ILL	AVON LAKE	AVON LAKE	OHIO	6-9	COAL	ST	1045	1051	N
CLEVELAND ELEC ILL	AVON LAKE	AVON LAKE	OHIO	10	OIL	GT	28	35	N
CLEVELAND ELEC ILL	EASTLAKE	EASTLAKE	OHIO	1-5	COAL	ST	1083	1083	N
CLEVELAND ELEC ILL	EASTLAKE	EASTLAKE	OHIO	6	OIL	GT	28	35	N
CLEVELAND ELEC ILL	LAKE SHORE	CLEVELAND	OHIO	14-18	COAL	ST	503	513	N
CLEVELAND ELEC ILL	LAKE SHORE	CLEVELAND	OHIO	D	OIL	ST	4	4	N
CLEVELAND ELEC ILL	SENECA	KINZUA TOWNSHIP	PENN	1-3	HYDR	PUMP	305	305	Y
CLEVELAND ELEC ILL	DAVIS BESSE	CARROLL	OHIO	1	NUCL	ST	447	452	Y
CLEVELAND ELEC ILL	BRUCE MANSFIELD	SHIPPINGPORT	PENN	1-2	COAL	ST	463	470	Y
COLUMBUS & SOUTHERN	PICWAY	COLUMBUS	OHIO	5	COAL	ST	90	100	N

OHIO EDISON	BRUCE MANSFIELD	SHIPPINGPORT	PENN	1-2	COAL	ST	1045	1060	Y
OHIO EDISON	NILES	NILES	OHIO	1-2	COAL	ST	228	230	N
OHIO EDISON	NILES	NILES	OHIO	ACT	OIL	GT	15	30	Y
OHIO EDISON	NEW CASTLE	WEST PITTSBURGH	PENN	1-5	COAL	ST	408	416	N
OHIO EDISON	NEW CASTLE	WEST PITTSBURGH	PENN	A-B	OIL	IC	8	6	Y
OHIO EDISON	WH SAMMIS	STRATTON	OHIO	1-7	COAL	ST	1620	1620	N
OHIO EDISON	WH SAMMIS	STRATTON	OHIO	AEMD	OIL	IC	2.8	2.8	Y
OHIO EDISON	WH SAMMIS	STRATTON	OHIO	B1-B4	OIL	IC	10.4	10.4	Y
OHIO EDISON	TORONTO	TORONTO	OHIO	5-7	COAL	ST	168	172	N
OHIO EDISON	WEST LORAIN	LORAIN	OHIO	ACT-CST	OIL	GT	166	190	Y
OHIO POWER	CARDINAL	BRILLIANT	OHIO	1	COAL	ST	585	600	N
OHIO POWER	GAVIN	CHESHIRE	OHIO	1-2	COAL	ST	2600	2600	N
OHIO POWER	MUSKINGUM RIVER	BEVERLY	OHIO	1-5	COAL	ST	1365	1425	N
OHIO POWER	AMOS	ST. ALBANS	WV	3	COAL	ST	1300	1300	Y
OHIO POWER	KAMMER	CAPTINA	WV	1-3	COAL	ST	600	630	N
OHIO POWER	MITCHELL	CAPTINA	WV	1-2	COAL	ST	1460	1460	N
OHIO POWER	PHILIP SPORN	GRAHAM STATION	WV	1-5	COAL	ST	1020	1050	Y
OHIO POWER	RACINE	RACINE	OHIO	1-2	HYDRO	WT	48	48	N
TOLEDO EDISON	BAYSHORE	OREGON	OHIO	1-4	COAL	ST	621	631	N
TOLEDO EDISON	BAYSHORE	OREGON	OHIO	1CT	OIL	GT	16	17	N
TOLEDO EDISON	ACME	TOLEDO	OHIO	2,5,6,T	COAL	ST	266	268	N
TOLEDO EDISON	ACME	TOLEDO	OHIO	LO PRESS	COAL	ST	20	20	N
TOLEDO EDISON	DAVIS BESSE	OAK HARBOR	OHIO	1	NUCL	ST	423	428	Y
TOLEDO EDISON	RICHLAND	DEFIANCE	OHIO	1-3	OIL	GT	33	42	N
TOLEDO EDISON	STRYKER	STRYKER	OHIO	1	OIL	GT	17	18	N
TOLEDO EDISON	BRUCE MANSFIELD	SHIPPINGPORT	PENN	2-3	COAL	ST	290	294	Y
OHIO VALLEY ELECTRIC	KYGER CREEK	CHESHIRE	OHIO	1-5	COAL	ST	1019	1043	N
OHIO VALLEY ELECTRIC	CLIFTY CREEK	MADISON	IND	1-6	COAL	ST	1215	1257	N

COLUMBUS & SOUTHERN	POSTON	ATHENS	OHIO	1-4	COAL	ST	204	216	N
COLUMBUS & SOUTHERN	CONESVILLE	CONESVILLE	OHIO	1-6	COAL	ST	1454	1478	N
COLUMBUS & SOUTHERN	CONESVILLE	CONESVILLE	OHIO	D	OIL	IC	8	9	N
COLUMBUS & SOUTHERN	WALNUT PEAKING	GROVEPORT	OHIO	8	OIL	GT	158	170	N
COLUMBUS & SOUTHERN	JM STUART	ABERDEEN	OHIO	1-4	COAL	ST	604	608	Y
COLUMBUS & SOUTHERN	JM STUART	ABERDEEN	OHIO	D	OIL	IC	3	3	Y
COLUMBUS & SOUTHERN	WC BECKJORD	RICHMOND	OHIO	6	COAL	ST	52	53	Y
DAYTON POWER & LIGHT	EAST BEND	BOONE CO	KY	2	COAL	ST	186	186	Y
DAYTON POWER & LIGHT	KILLEN	WEST UNION	OHIO	2	COAL	ST	402	402	Y
DAYTON POWER & LIGHT	OH HUTCHINGS	MIAMISBURG	OHIO	1-6	COAL	ST	374	380	N
DAYTON POWER & LIGHT	OH HUTCHINGS	MIAMISBURG	OHIO	7	OIL	GT	26	32	N
DAYTON POWER & LIGHT	YANKEE STREET	CENTERVILLE	OHIO	1-7	OIL	GT	123	144	N
DAYTON POWER & LIGHT	FRANK M TAIT	DAYTON	OHIO	D	OIL	GT	10	10	N
DAYTON POWER & LIGHT	MONUMENT	DAYTON	OHIO	D	OIL	GT	12	12	N
DAYTON POWER & LIGHT	SIDNEY	SIDNEY	OHIO	D	OIL	GT	12	12	N
DAYTON POWER & LIGHT	JM STUART	ABERDEEN	OHIO	1-4	COAL	ST	820	820	Y
DAYTON POWER & LIGHT	WC BECKJORD	NEW RICHMOND	OHIO	6	COAL	ST	207	210	Y
DAYTON POWER & LIGHT	CONESVILLE	CONESVILLE	OHIO	4	COAL	ST	132	132	Y
DAYTON POWER & LIGHT	MIAMI FORT	NORTH BEND	OHIO	7-8	COAL	ST	360	360	Y
OHIO EDISON	RE BURGER	MEAD	OHIO	1-5	COAL	ST	510	518	N
OHIO EDISON	RE BURGER	MEAD	OHIO	AEMD	OIL	IC	2	2	Y
OHIO EDISON	RE BURGER	MEAD	OHIO	B1-B2	OIL	IC	4.8	4.8	Y
OHIO EDISON	BEAVER VALLEY	SHIPPINGPORT	PENN	1	NUCL	ST	810	810	Y
OHIO EDISON	EDGEWATER	LORAIN	OHIO	2-4	COAL	ST	165	168	N
OHIO EDISON	EDGEWATER	LORAIN	OHIO	ACT-BCT	OIL	GT	38	42	Y
OHIO EDISON	GORGE	AKRON	OHIO	6-7	COAL	ST	82	96	N
OHIO EDISON	MAD RIVER	SPRINGFIELD	OHIO	1-3	COAL	ST	48	48	N
OHIO EDISON	MAD RIVER	SPRINGFIELD	OHIO	ACT-BCT	OIL	GT	50	60	Y

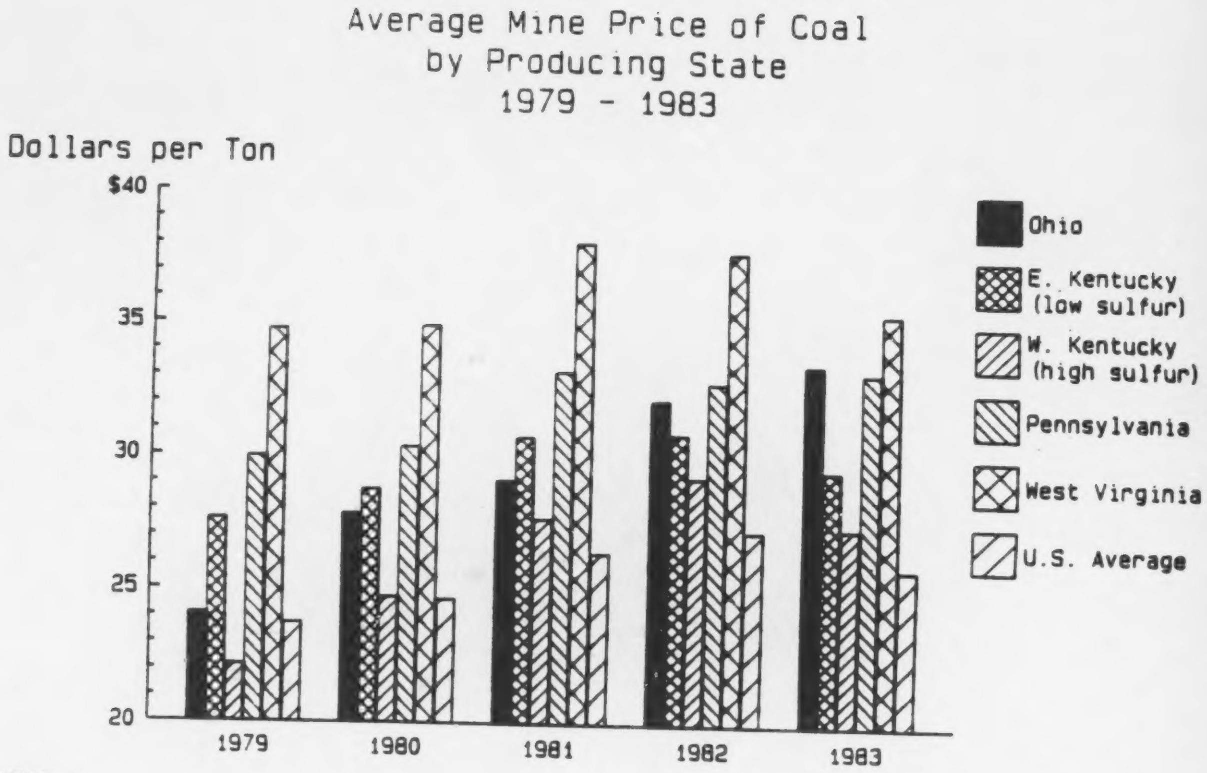

Average Mine Price of Coal
by Producing State
1979 - 1983
Dollars per Ton
$40
35
30
25
20
1979
1980
1981
1982
1983
Ohio
E. Kentucky (low sulfur)
W. Kentucky (high sulfur)
Pennsylvania
West Virginia
U.S. Average

FIGURE 21

TABLE 17 ELECTRICITY CONSUMPTION BY INDUSTRIAL SIC CODE ANNUAL DATA IN GIGAWATT-HOURS

	TEXTILE	PAPER	PRINT	CHEMICALS	PETRO	RUBBER	STONE	PRIMARY METALS	FABRICATED METALS	MACHINE	ELECTRIC MACHINE	TRANSPORT EQUIPTMENT	OTHER	TOTAL
1978	117.8	1437.5	514.7	3486.3	1845.7	2337.1	2505.5	22305.0	2494.7	2439.3	2489.4	4655.2	16110.1	64830.7
1979	94.6	1364.5	492.0	3438.3	1835.7	2052.2	2373.8	19850.1	2264.0	2349.7	2272.4	3972.7	9343.6	53891.7
1980	80.2	1420.7	483.2	3723.1	1754.3	2069.0	2288.5	19325.9	2448.2	2357.4	2514.4	4115.8	9531.7	54318.8
1981	77.9	1254.8	432.0	3443.0	1589.6	1920.3	2057.0	12785.5	2203.3	2098.1	2433.6	3855.7	9413.8	45838.3
1982	106.9	1140.3	404.0	3807.8	1776.2	1968.2	2093.8	14135.9	2376.0	1787.3	1790.6	4371.8	9935.6	47956.5
1983	104.6	1209.8	399.1	3828.1	1874.1	2152.8	2207.3	17629.8	2483.3	1904.5	2072.5	4093.7	13167.0	55422.4

TABLE 18 NATURAL GAS CONSUMPTION BY INDUSTRIAL SIC CODE ANNUAL DATA IN MILLION BTU

	FOOD	CHEMICAL	PETRO & COAL	RUBBER	STONE	PRIMARY METALS	FABRICATE METALS	MACHINE	ELECTRIC MACHINERY	OTHER	TOTAL
1978	11632	39021	9174	6910	44839	126981	27012	5501	7385	30574	309032
1979	16188	46093	11976	8621	45720	133568	27021	5259	5739	38978	339165
1980	15217	44177	11836	7393	41754	105947	24245	5111	4436	37063	297182
1981	15308	51168	10000	7669	31703	106599	27298	5416	5026	35538	295729
1982	13373	41482	7863	6899	23452	82597	22096	5668	4348	30758	238539
1983	11251	20054	7468	6551	19463	66700	14957	8028	7947	26322	188744

TABLE 19 OHIO ELECTRICITY CUSTOMERS, SALES, AND REVENUES BY ELECTRIC UTILITY, 1988

RESIDENTIAL

COMPANY	CUSTOMERS	REVENUE ($000)	SALES (MWH)	REVENUE ($/KWH)
Cincinnati Gas & Electric	457,068	$291,503	4,565,830	0.0638
Cleveland Electric Illuminating	642,798	$385,075	4,412,155	0.0873
Columbus & Southern Ohio Electric	428,256	$248,223	3,690,384	0.0673
Dayton Power & Light	376,432	$281,966	3,668,534	0.0769
Monongahela Power	21,975	$9,447	182,647	0.0517
Ohio Edison	763,032	$476,172	5,859,114	0.0813
Ohio Power	541,069	$315,461	5,183,589	0.0609
Toledo Edison	242,382	$161,275	1,914,748	0.0842
TOTAL RESIDENTIAL SECTOR	3,473,012	2,169,122	29,477,001	0.0736

COMMERCIAL

	CUSTOMERS	REVENUE ($000)	SALES (MWH)	REVENUE ($/KWH)
Cincinnati Gas & Electric	47,268	$196,075	3,056,859	0.0468
Cleveland Electric Illuminating	62,116	$334,660	4,265,023	0.0445
Columbus & Southern Ohio Electric	41,068	$202,004	3,403,692	0.1040
Dayton Power & Light	34,698	$139,038	2,074,608	0.0477
Monongahela Power	2,518	$5,367	106,806	0.0162
Ohio Edison	76,962	$348,436	4,506,020	0.0816
Ohio Power	67,401	$179,447	3,106,665	0.0133
Toledo Edison	23,558	$105,481	1,340,997	0.0337
TOTAL COMMERCIAL SECTOR	355,589	1,510,508	21,860,670	0.0691

INDUSTRIAL

	CUSTOMERS	REVENUE ($000)	SALES (MWH)	REVENUE ($/KWH)
Cincinnati Gas & Electric	2,470	$201,116	4,297,387	0.0468
Cleveland Electric Illuminating	7,236	$430,209	7,513,674	0.0573
Columbus & Southern Ohio Electric	2,775	$95,656	1,941,998	0.0493
Dayton Power & Light	2,309	$153,162	2,912,776	0.0526
Monongahela Power	757	$9,601	295,434	0.0325
Ohio Edison	909	$359,775	6,758,728	0.0532
Ohio Power	6,838	$491,335	13,541,126	0.0363
Toledo Edison	1,522	$169,673	3,127,243	0.0543
TOTAL INDUSTRIAL SECTOR	24,816	1,910,527	40,388,366	0.0473
GRAND TOTAL	3,853,414	5,590,157	91,726,037	0.0609

TABLE 20 OHIO ELECTRIC UTILITY ENVIRONMENTAL AND RESEARCH EXPENDITURES

COMPANY	1988 ENVIRONMENTAL EXPENSES	CUMULATIVE ENVIRONMENTAL EXPENDITURES	RESEARCH AND DEVELOPMENT EXPENSES
Cincinnati Gas and Electric	$27,451,807	$275,583,743	$1,534,831
Cleveland Electric Illuminating	NA	$523,114,758	$5,906,291
Columbus & Southern Ohio Electric	NA	NA	NA
Dayton Power & Light	$14,665,236	$218,472,035	$2,184,928
Ohio Edison (System)	$68,255,584	$585,662,529	$2,420,672
Ohio Power	NA	NA	NA
Ohio Valley Electric	$13,585,280	$71,788,101	$73,766
Toledo Edison	$15,212,531	$212,429,245	$298,934
TOTAL	$139,170,438	$1,887,050,408	$12,419,422

TABLE 21 OHIO ELECTRICITY SUPPLY AND GENERATION BY ELECTRIC UTILITY RANKING
1982 - 1983

(Megawatt-hours per Year)

1983

ELECTRIC UTILITY	NET ENERGY FOR LOAD	PERCENT OF TOTAL	IN-STATE NET GENERATION	PERCENT OF TOTAL	IN STATE SALES
Ohio Power	28,520,000	22.6%	22,663,000	21.4%	22,613,162
Ohio Edison	20,104,000	15.9%	12,583,004	11.9%	18,212,422
Cleveland Electric Illuminating	18,584,400	14.7%	15,757,500	14.9%	17,309,688
Cincinnati Gas & Electric	13,662,763	10.8%	12,604,617	11.9%	13,135,670
Dayton Power & Light	11,422,041	9.1%	10,313,000	9.7%	10,008,332
Columbus & Southern Ohio Electric	10,268,000	8.1%	11,153,000	10.5%	9,473,584
Toledo Edison	7,833,000	6.2%	6,791,000	6.4%	7,130,548
Ohio Valley Electric	10,528,934	8.3%	6,827,000	6.4%	7,218,253
Buckeye Power	4,582,558	3.6%	7,200,000	6.8%	4,074,369
Monongahela Power	576,132	0.5%	0	0.0%	567,204
TOTAL	126,081,828		105,892,121		109,760,189

1982

	NET ENERGY FOR LOAD	PERCENT OF TOTAL	IN-STATE NET GENERATION	PERCENT OF TOTAL	IN STATE SALES
Ohio Power	24,620,288	19.2%	21,789,448	21.1%	21,372,374
Ohio Edison	25,982,205	20.2%	14,752,744	14.3%	17,607,898
Cleveland Electric Illuminating	18,461,867	17.4%	14,418,277	13.9%	16,676,862
Cincinnati Gas & Electric	14,123,044	13.3%	13,649,791	13.2%	12,670,319
Dayton Power & Light	11,032,617	10.4%	10,169,538	9.8%	9,890,117
Columbus & Southern Ohio Electric	10,354,904	9.7%	9,320,523	9.0%	9,063,295
Toledo Edison	7,612,298	7.2%	6,067,610	5.9%	6,918,279
Ohio Valley Electric	7,377,003	6.9%	6,393,715	6.2%	6,672,932
Buckeye Power	4,300,521	4.0%	6,930,921	6.7%	4,113,718
Monongahela Power	612,993	0.6%	0	0.0%	540,347
TOTAL	128,457,938		103,489,587		105,728,029

TABLE 22 COMPARISON OF SELF HELP AND UTILITY INDUSTRIAL SALES VOLUMES,1974-1983
MILLION CUBIC FEET

Year	Columbia Gas of Ohio Total Self Help Volumes	East Ohio Gas Total Self Help Volumes	Total Self Help Volumes	Columbia Gas of Ohio Total Industrial Sales	East Ohio Gas Total Industria Sales	Total Industrial Sales	Percent Self Help Gas
1974	82	81	162	186,661	150,049	336,710	0.05%
1975	649	647	1,296	129,567	118,030	247,597	0.52%
1976	796	2,704	3,500	128,450	125,308	253,758	1.38%
1977	5,271	6,345	11,616	100,892	113,440	214,332	5.14%
1978	9,216	6,990	16,206	117,359	130,870	248,229	6.13%
1979	9,597	8,066	17,664	140,511	134,851	275,362	6.03%
1980	8,162	11,506	19,668	128,072	104,894	232,966	7.79%
1981	9,319	15,612	24,931	130,844	101,828	232,672	9.68%
1982	8,179	11,706	19,885	103,545	82,189	185,734	9.67%
1983	23,249	14,002	37,251	68,402	77,699	146,101	20.32%

HISTORIC AND PROJECTED PURCHASES OF OHIO NATURAL GAS BY OHIO DISTRIBUTION COMPANIES, 1981 - 1993

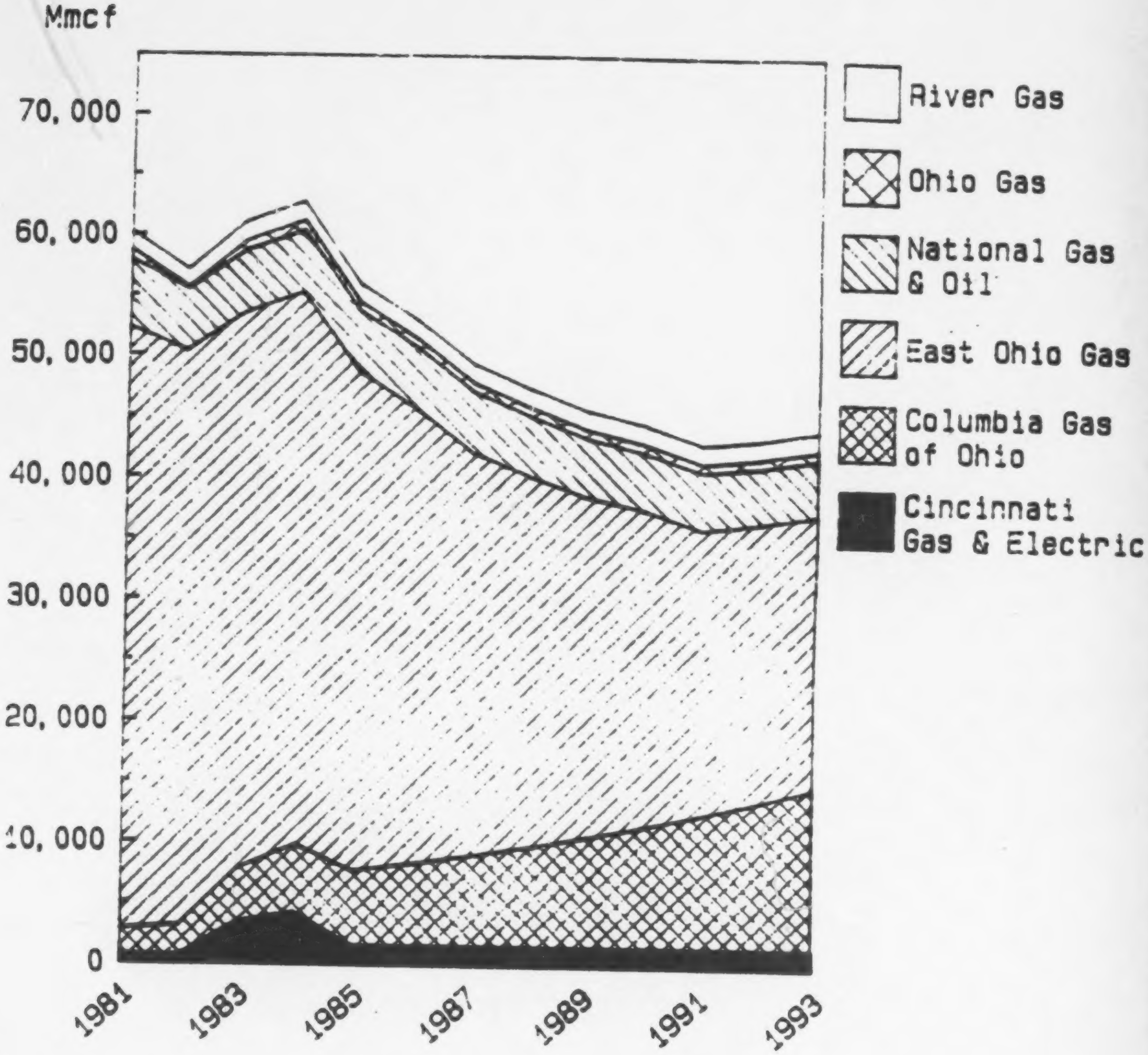


FIGURE 22

TABLE 23

OHIO NATURAL GAS CUSTOMERS, SALES, AND REVENUES
BY NATURAL GAS UTILITY, 1983

RESIDENTIAL

COMPANY	CUSTOMERS	REVENUE ($000)	SALES (Mmcf)	REVENUE ($/Mcf)
Cincinnati Gas & Electric	269,544	$193,830	31,402	6.1725
Columbia Gas of Ohio	981,418	$759,625	115,033	6.6035
Dayton Power & Light	241,206	$[illegible]6,140	26,897	6.1769
East Ohio Gas	928,863	$748,482	135,253	5.5339
National Gas & Oil	13,330	$7,782	1,502	5.1811
Ohio Gas	20,374	$16,268	2,107	7.7216
River Gas	16,861	$9,465	1,643	5.7608
West Ohio Gas	48,743	$35,192	5,150	6.8334
TOTAL RESIDENTIAL SECTOR	2,520,619	$1,936,784	318,987	6.0717

COMMERCIAL

COMPANY	CUSTOMERS	REVENUE ($000)	SALES (Mmcf)	REVENUE ($/Mcf)
Cincinnati Gas & Electric	30,477	$112,289	19,034	5.8994
Columbia Gas of Ohio	79,278	$317,785	51,524	6.1677
Dayton Power & Light	17,824	$45,893	11,093	4.1371
East Ohio Gas	55,912	$269,432	52,388	5.1430
National Gas & Oil	1,268	$3,560	725	4.9103
Ohio Gas	2,304	$6,859	922	7.4393
River Gas	1,464	$3,615	662	5.4607
West Ohio Gas	158,048	$17,916	2,836	6.3173
TOTAL COMMERCIAL SECTOR	346,572	$777,348	139,184	5.5850

INDUSTRIAL

COMPANY	CUSTOMERS	REVENUE ($000)	SALES (Mmcf)	REVENUE ($/Mcf)
Cincinnati Gas & Electric	1,486	$109,986	19,436	5.6589
Columbia Gas of Ohio	1,604	$381,938	68,570	5.5700
Dayton Power & Light	1,404	$57,273	10,559	5.4241
East Ohio Gas	1,371	$377,571	79,745	4.7347
National Gas & Oil	68	$30,764	7,426	4.1427
Ohio Gas	233	$11,808	1,844	6.4023
River Gas	21	$6,882	1,310	5.2534
West Ohio Gas	4,702	$14,932	2,464	6.0601
TOTAL INDUSTRIAL SECTOR	10,889	$991,154	191,354	5.1797
GRAND TOTAL	2,878,080	3,705,287	649,525	5.7046

TABLE 24 PETROLEUM PRODUCT CONSUMPTION BY END-USE SECTOR
1983

	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	TRANSPORT	ELEC UTIL	TOTAL
ASPHALT & ROAD OIL						
MILLION BARRELS		9.24				9.24
TRILLION BTU		58.36				58.36
DIESEL			3.90	15.70		19.60
MILLION BARRELS			22.50	91.69		114.19
TRILLION BTU						
DISTILLATE						
MILLION BARRELS	7.36	3.47	5.59	3.77	0.28	20.44
TRILLION BTU	42.99	20.20	32.60	21.95	1.51	119.25
FEEDSTOCK						
MILLION BARRELS			23.01			23.01
TRILLION BTU			117.91			140.92
PETRO COKE						
MILLION BARRELS			3.16			3.16
TRILLION BTU			17.60			17.60
GASOLINE						
MILLION BARRELS		0.90	0.56	92.40		93.86
TRILLION BTU		5.50	3.90	544.20		553.59
KEROSENE						
MILLION BARRELS	1.89		0.26			2.15
TRILLION BTU	10.74		1.45			12.19
JET FUEL						
MILLION BARRELS				5.90		5.90
TRILLION BTU				32.60		38.50
LPG						
MILLION BARRELS	2.17	0.38	3.44	0.07		6.06
TRILLION BTU	8.70	1.54	13.79	0.27		24.30
RESIDUAL						
MILLION BARRELS		0.16	1.90	.00	0.03	2.09
TRILLION BTU		1.00	11.93	0.02	0.19	15.23
TOTAL						
MILLION BARRELS	11.43	14.15	60.41	193.93	0.29	280.10

TABLE 25 OHIO RETAIL GASOLINE MARKET SHARES
1982 - 1983

1983			1982		
COMPANY	GALLONS (000)	MARKET SHARE	COMPANY	GALLONS (000)	MARKET SHARE
Sohio	1,229,539	23.5%	Sohio	1,246,188	24.0%
Marathon	[illegible]	14.0%	Marathon	654,882	12.6%
Shell	285,267	5.4%	Shell	260,788	5.0%
Ashland	237,320	4.5%	Ashland	230,595	4.4%
Clark	209,580	4.0%	Sun	209,422	4.0%
Sun	198,244	3.8%	Clark	184,332	3.6%
Certified	102,891	2.0%	Gulf	119,866	2.3%
Gulf	96,270	1.8%	Certified	109,896	2.1%
Porta	96,157	1.8%	Lyden	74,633	1.4%
Lyden	78,143	1.5%	Porta	71,841	1.4%
Union	75,733	1.5%	Union	71,760	1.4%
Omega	68,854	1.3%	Exxon	67,372	1.3%
Mobil	54,342	1.0%	Omega	65,062	1.3%
Englefield	53,693	1.0%	Mobil	51,788	1.0%
Campbell	44,081	0.8%	Englefield	50,402	1.0%
Hi-Lo	39,347	0.7%	Kayo	47,750	0.9%
Rich	38,634	0.7%	Hi-Lo	41,510	0.8%
Kayo	37,318	0.7%	Oasis	41,301	0.8%
Holland	34,285	0.7%	Rich	34,430	0.7%
King Kwik	30,468	0.6%	Campbell	34,334	0.7%
TOTAL	3,739,487	70.7%	TOTAL	3,668,007	70.7%
TOTAL MARKET	5.3 BILLION GALLONS		TOTAL MARKET	5.2 BILLION GALLONS	

TABLE 26 GASOLINE PRICES FOR SELECTED CITIES IN OHIO AND U.S. URBAN AVERAGE 1973 - 1983

DOLLARS PER GALLON

	LEADED REGULAR			UNLEADED REGULAR		
	CINCINNATI	CLEVELAND	U.S. URBAN AVERAGE	CINCINNATI	CLEVELAND	U.S. URBAN AVERAGE
1973	$0.45	$0.42	$0.42			
1974	$0.54	$0.53	$0.49			
1975	$0.58	$0.59	$0.57			
1976	$0.59	$0.61	$0.59	$0.61	$0.61	$0.61
1977	$0.61	$0.65	$0.62	$0.65	$0.64	$0.66
1978	$0.65	$0.68	$0.63	$0.69	$0.69	$0.68
1979	$0.86	$1.18	$0.88	$0.90	$0.91	$0.92
1980	$1.17	$1.30	$1.20	$1.23	$1.23	$1.26
1981	$1.27	$1.23	$1.31	$1.35	$1.39	$1.38
1982	$1.22	$1.27	$1.22	$1.29	$1.33	$1.30
1983	$1.19	$1.18	$1.16	$1.25	$1.25	$1.24

Notes & Sources

1. Total energy consumed: includes coal, natural gas, self help gas, special purchase gas and fuel oil displacement gas, refined petroleum products supplied, electric utility and industrial and municipal generation from hydropower, nuclear power, wood and waste, along with net imports of electricity. Historic data which have not been available, such as solar energy, geothermal, and biomass are not included in total consumption figures.

2. Coal is anthracite, bituminous and lignite

   Ohio coal characteristics:

   - High Btu bituminous
   - 50 percent fixed carbon
   - 11,500-12,500 Btu per pound
   - Price of coal $34/ton
   - 76 percent of all coal produced in Ohio was consumed in Ohio

   Sources:

   - Ohio Department of Natural Resources, Division of Geological Survey.
   - Electric utilities - Energy Information Administration (EIA), EIA Form 759 (formerly FPC Form 4), "Monthly Power Plant Report".
   - EIA Form 6, "Coal Distribution Report".
   - Federal Energy Regulatory Commission (FERC) Form 423.
   - Energy Information Administration, "Cost and Quality of Fuels for Electric Plants".
   - 1983 Keystone Coal Industry Manual, published by Mining Information Services, 1983 New York.

3. Conversion Factors & Measures

   Units of measures:

TBtu	trillions of British Thermal Units
MMBtu	millions of British Thermal Units
BCF	billions of cubic feet
MCF	thousands of cubic feet
GWh	millions of kilowatt-hours, (gigawatt hours)
TH BBL	thousands of 42 gallon barrels

Conversion factors:

Coal	23.2 (million Btu per ton)
Electricity	3.412 (thousand Btu per KWh)
Gasoline	5.25 (million Btu per barrel)
Hydro	10.39 (thousand Btu per kWh)
Natural Gas	1.032 (thousand Btu per cubic foot)
Nuclear	10.49 (thousand Btu per KWh)

4. Electricity

   Sources:

   - Ohio Division of Energy monthly Form SE-1.
   - Individual Utility "Long Term Forecast Reports" filed annual with ODOE, Forms FE-1,4,7, and 8.
   - EIA Form 4 "Generation and Consumption of Fuels".
   - FERC Form 423 "Cost and Quality of Fuels for Electric Plants".
   - FERC Form 1 "Annual Report of Electric Utilities, Licenses and Others" (Class A and B).

5. Natural gas consumption includes standard tariff utility sales, self help natural gas, Fuel Oil Displacement (FOD) Gas, Synthetic Natural Gas (SNG), and Special Marketing Programs (SMP) gas. It does not include direct purchase of gas by industrial concerns from an interstate wholesale supplier. Consequently consumption values do not accurately represent demand.

   - Ohio produced gas in 1983 was 62.8 BCF, 8.6 percent of total supply.
   - The weighted average state aggregate price is slightly less than $4.48 per thousand cubic feet.
   - Aggregate demand for utility supplied natural gas was 700 billion cubic feet (BCF).
   - Self help and FOD gas consumption was slightly more than 54 BCF.
   - Natural gas consumption declined 17 percent from 1982 to 1983.
   - Aggregate demand is down approximately 30 percent from 1979 level.

   Sources:

   - Ohio Division of Energy monthly SG-1 and SG-2 Forms.
   - Ohio utility "Long Term Forecast Report" Forms FG-1, FG-2, FG-4, and FG-4a.

6. Petroleum consumption is derived from various sources. A complete methodology is available in the working notes for the Status Report, filed in the Division of Energy Library. Each petroleum product is calculated separately.

1/21/85 S6260-6(U)A-

AN ASSESSMENT OF THE SUPPLIES OF NATURAL GAS AND FUELS FOR GENERATING ELECTRICITY IN OHIO

FROM NOVEMBER 1983 through OCTOBER 1984

PRESENTED TO
GOVERNOR RICHARD F. CELESTE,
THE OHIO GENERAL ASSEMBLY, AND
THE PUBLIC UTILITIES COMMISSION OF OHIO

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Alfred S. Dietzel, Director

ODOE
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STATE OF OHIO
Richard F. Celeste, Governor
Alfred S. Dietzel, Director

Department of Development
P.O. Box 1001 • Columbus, Ohio • 43216

December 15, 1983

DIVISION OF ENERGY

The Honorable Richard F. Celeste
Governor
Statehouse
Columbus, Ohio 43215

Dear Governor Celeste:

Pursuant to ORC 4905.14, each public electric and gas utility in Ohio is required to file with the Ohio Department of Development, Division of Energy, a report on July and November 1, containing projections of the utilities' total demand and fuel supply over the following 12 months. As required by the same statute, we sent copies of the utilities' latest reports to you in November.

The attached report is a summary and analysis of these reports, also required by 4905.14. It includes an evaluation of the Ohio natural gas and electric situation for the coming winter and the next twelve months. It appears at this time that fuel supplies for manufacturing and heating, and for generating electricity will be adequate, even with a 10 percent colder than normal winter and Ohio's increasing industrial activity.

The only foreseeable potential supply disruption would be as a result of a coal miners' strike. The current United Mine Workers contract expires on September 30, 1984. With approved Emergency Rules on file, we remain prepared to respond to emergency disruptions in fuel supply, such as those possible from crises in the Middle East or from a coal strike.

Sincerely,

Alfred S. Dietzel
Director

ASD/ra

cc: Thomas Smith, Senate Clerk
Ty Marsh, Clerk of the House
Michael Del Bane, PUCO Chairman DG/sg 12/14/83

EXECUTIVE SUMMARY

Based on one year forecasts submitted by each of the major electric and natural gas utility companies serving Ohio, and based on independent projections of the Ohio Division of Energy, the supplies of fuels for generating electricity and supplies of natural gas for heating and manufacturing are forecast to be adequate through October 1984. The forecast takes into account the possibility of a 10 percent colder than normal winter and the increased energy demand resulting from accelerating statewide economic recovery.

Supplies of coal, used to generate more than 95 percent of electricity in Ohio, are not expected to fall below a safe two month supply margin for any generating utility company through October 1984. Projection of coal supply beyond October 1984 is highly dependent on the potential of a coal strike when the United Mine Workers contract expires September 30, 1984. The possibility of a strike and subsequent preparation for fuel supplies will be discussed in the August 1984 edition of this report. Roughly fifty percent of the coal supplied to Ohio electric utilities is from out of state.

Supplies of the eight major natural gas distribution companies serving the state are expected to be ample. In addition to the actual delivered product, gas in storage will be sufficient to meet additional demand in the event of a 10 percent colder than normal winter or strong industrial recovery. Approximately ninety percent of Ohio's natural gas supply will continue to come from out of state sources.

An Assessment of the Supplies of Natural Gas and Fuels for Generating Electricity in Ohio from November 1983 - October 1984

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I. INTRODUCTION

This report has been prepared by the Ohio Department of Development, Division of Energy (ODOE), pursuant to Section 4905.14(E) of the Ohio Revised Code. The statute requires ODOE to provide a summary, analysis and recommendations based on the Ohio public utilities' energy supply and demand projections for the twelve month period beginning November 1, 1993. In accordance with Section 4905.14(D), a copy of each utility's November forecast was submitted to the Governor, Clerk of the Ohio Senate, the Legislative Clerk of the Ohio House of Representatives, and the Public Utilities Commission of Ohio on November 10, 1993. The utilities' forecasts and historical data are the primary input for this report. Several other sources of information have also been used, including historical energy data developed by the Ohio Division of Energy, federal energy reports, and publications from the American Gas Association and the Electric Power Research Institute. A substantial and successful effort has been undertaken to develop a comprehensive data base which supports the Division of Energy's ability to provide timely analyses and forecasts.

Objectives

Major objectives guiding the preparation of this report include:

1. To provide an adequate historical, energy-related data profile for identification of current status and future trends;
2. To provide analysis and interpretation of short-term changes in energy supply and demand;
3. To provide an assessment of the adequacy of natural gas and electric energy supply for the upcoming twelve months; and
4. If a potential deficiency between supply and demand is identified, to suggest a strategy to prevent or mitigate any interruption or curtailment of service.

Requirements and Scope of This Report

Utilities are required to file short-term forecast information by Ohio Revised Code Section 4935.11, effective November 1, 1978. The Division prepares a summary and analysis of this information under paragraph (E) of this section.

The municipal utilities, industrial facilities and the rural electric cooperatives are not required to file the semi-annual report. Accordingly this report incorporates data from the major electric and gas utilities serving the state. The Ohio Division of Energy estimates that the major utilities provide approximately [illegible] percent of the electricity consumed in the state and 93 percent of the natural gas, excluding self-help gas.

Ohio Division of Energy Forecasts

As part of its analysis, the Ohio Division of Energy makes its own independent forecasts to serve as validation checks. The Division has the capability to forecast monthly demand by utility and for the state as a whole within a reasonable level of error (less than five percent in most cases). Such forecasts are based on historical month-by-month actual consumption for both electricity and natural gas and other appropriate variables such as population, income and temperature data. As in any forecast, certain important socioeconomic conditions are assumed in the independent forecasts. These assumptions are stated below:

1. Energy demand generally follows its historical consumption pattern.
2. Socioeconomic changes are minimal in affecting demand for energy in the short run.
3. The observed level of conservation will remain in affect.
4. Other specific assumptions are stated where appropriate.

Overview of this Report

The report is divided into two parts: electric energy and natural gas. Materials presented in these two parts are, for the most part, parallel in arrangement. They contain:

(a) a profile of reporting utilities;

(b) historical sources of supplies/suppliers;

(c) consumption history by sector, utility, and state; and

(d) the utilities' forecasts and independent forecasts by the Ohio Division of Energy.

Temperature and Energy Consumption

Changes in the observed annual energy requirements of the three major consuming sectors (industrial, commercial, residential) may be explained by a variety of factors. Temperature is a variable which explains much of the observed variation. It is particularly significant in the residential and commercial sectors, during summer and winter periods, when electricity and natural gas are used to maintain comfortable room temperatures.

Two indicators which measure temperature-sensitive energy requirements are heating degree days and cooling degree days. The daily mean temperature is obtained by adding together the maximum and minimum temperatures reported for the day and dividing the total by two. When the daily mean temperature is 65^0 F, the degree day total is zero. Each degree of mean temperature below 65^0 F is counted as one heating degree day. This indicator is convenient because the amount of heat required to maintain a certain temperature level is proportional to heating degree days.

The cooling degree days are defined similarly: each degree of mean temperature above 65^0 F is counted as one cooling degree day. If the daily mean temperature is 65^0 F or lower, the cooling degree day total is zero.

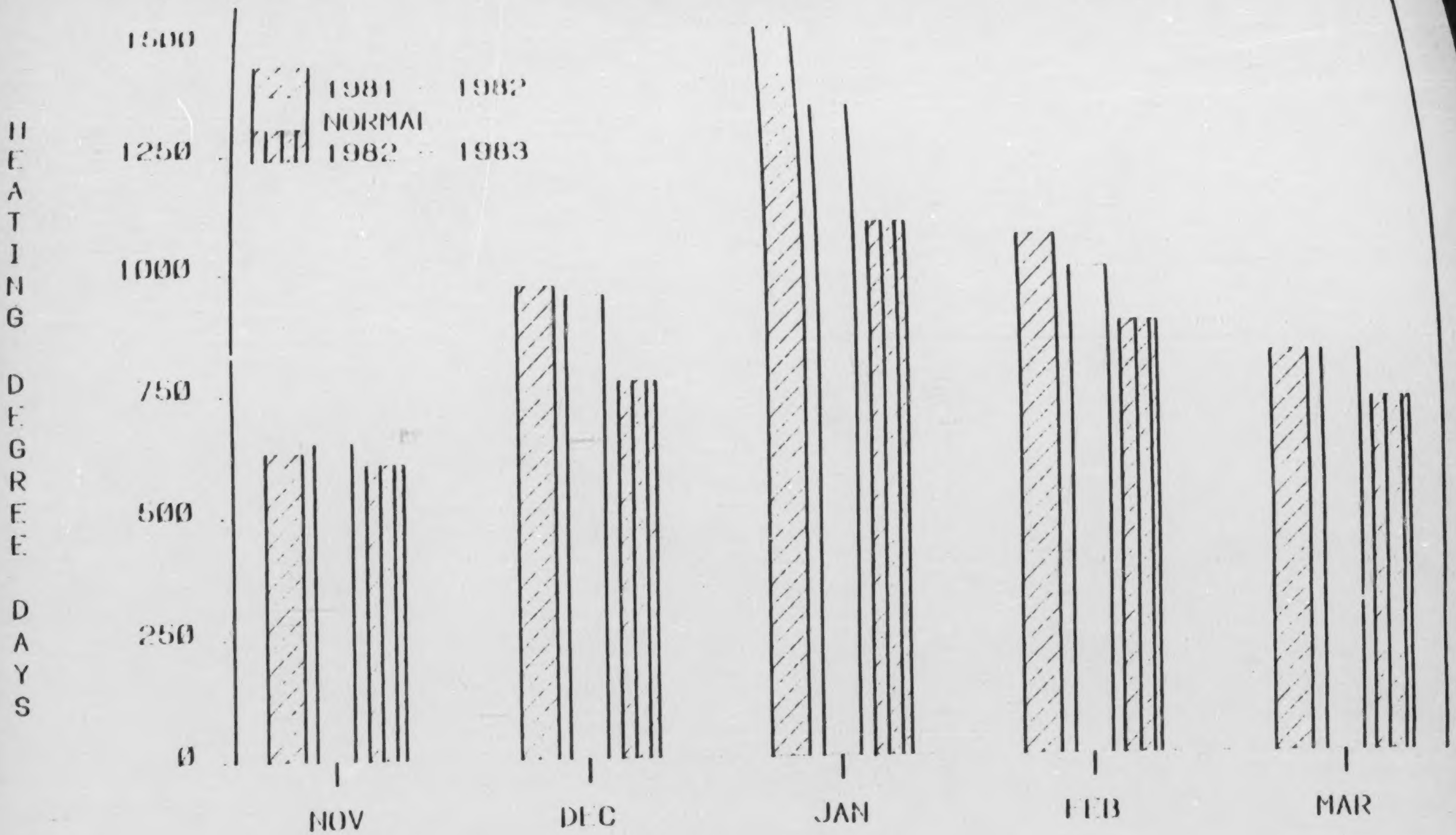
Since most homes and commercial buildings in Ohio are heated by natural gas, the reporting gas utilities are required to submit supply and demand forecasts under a normal winter scenario and a 10 percent colder than normal winter scenario. In addition, the relationship between natural gas consumption and heating degree days is closely monitored during the winter heating season (from November through March). Table 1 and Figure 1 show, for the past two heating seasons, population-weighted state heating degree day summaries. In addition, a normal heating degree day series, defined as the 30-year average of the years 1941 to 1970, is also presented.

Table 1. Population-Weighted
Heating Degree-Day Summary for Ohio
November 1982 through March 1983

Month	Heating Season (November-March)		
	1982-1983	Norm	1981-1982
November	606	654	632
Deviation from Norm	-7.3%	--	-3.4%
Deviation from Previous Year	-4.1%	--	-10.9%
December	774	948	971
Deviation from Norm	-18.4%	--	2.4%
Deviation from Previous Year	-20.3%	--	0.5%
January	1,099	1,350	1,535
Deviation from Norm	-18.6%	--	13.7%
Deviation from Previous Year	-28.4%	--	4.2%
February	888	997	1,066
Deviation from Norm	-10.9%	--	6.9%
Deviation from Previous Year	-16.7%	--	16.2%
March	726	822	824
Deviation from Norm	-11.7%	--	0.2%
Deviation from Previous Year	-11.9%	--	-4.3%

Source: National Oceanic and Atmospheric Administration and the Ohio Division of Energy.

FIGURE 1 POPULATION WEIGHTED HEATING DEGREE DAYS FOR OHIO
WINTER HEATING SEASONS, 1981 - 1983



SOURCE: NATIONAL OCEANIC AND ATMOSPHERIC ADMINISTRATION

II. ELECTRICITY

This section is based on the November forecasts filed by nine major Ohio electric utilities. Two of these, Columbus and Southern Ohio Electric Company and Ohio Power Company, are subsidiaries of the American Electric Power Company. Since American Electric Power operates as a centrally dispatched, integrated distribution system, the report reviews forecasts of demand and fuel adequacy for the entire American Electric Power Company. The Allegheny Power System is also a centralized power generation and distribution system, of which one subsidiary is Monongahela Power. Thus, the forecasts of eight utilities are presented in the report. They are:

1. Allegheny Power System (APS)
    - Monongahela Power
    - Other out-of-state utilities not subject to reporting
2. American Electric Power Company (AEP)
    - Columbus and Southern Electric Company (C&SOE)
    - Ohio Power Company (OP)
    - Other out-of-state utilities not subject to reporting
3. Cincinnati Gas and Electric Company (CG&E)
4. Cleveland Electric Illuminating Company (CEI)
5. Dayton Power and Light Company (DP&L)
6. Ohio Edison Company (and its subsidiary Pennsylvania Power) (OE)
7. Ohio Valley Electric Corporation (OVEC)
8. Toledo Edison Company (TE)

With the exception of OVEC, each of these is an investor-owned utility supplying electricity to residential, commercial, and industrial customers in its service areas. The Ohio Valley Electric Corporation is a single-customer utility supplying power for the uranium enrichment plant at Piketon, Ohio. It also sells surplus generation to other electric utilities.

Supply and Generation

Source/Supplier of Fuel for Electric Generation

Fuels used in Ohio for electric generation include coal, oil, natural gas and nuclear fuel. Nuclear fuel sources are not monitored by the Division. All other fuels are monitored through the utilities' monthly reports. Tables 2 and 3 (following) list coal and oil deliveries to power plants located in Ohio. The main sources of supply and/or suppliers of these fuels remain the same as in the last reporting period.

Coal deliveries to Ohio electric plants during the twelve months ending August 1983, declined by 7,582,700 tons from the previous twelve month period, a decline of 15.9 percent (Table 2 and Figure 2). Deliveries of oil to Ohio power plants decreased by 363,800 barrels during the twelve months ending August 1983 from the previous twelve month period, a decrease of 48.2 percent (Table 3 and Figure 3). The decline in coal deliveries is attributable to slackening demand for electricity, while the decrease in oil deliveries was occasioned by a significantly large purchase of oil by the Ohio Edison Company in August 1982.

Electric Generation by Type of Fuel

Coal remains the main source of fuel for electric generation in Ohio, a condition which is not expected to change in the foreseeable future. In the twelve month period ending August 1983, 94.2 percent of the total electricity generated in Ohio was from coal. Electricity generated by oil continued to decline to a negligible 0.1 percent of total generation. Nuclear-generated electricity accounted for 5.7 percent of electricity generated in the state in the twelve months ending August 1983. From April through August 1982, Davis-Besse was shut down for maintenance. It began generating electricity in September 1982 and was shut down for refueling in July 1983. Operations resumed in September 1983 with the next refueling scheduled for August 1984.

Table 4 and Figure 4 show the combined monthly totals of the reporting utilities' net generation from Ohio plants. Historical power plant fuel consumption and fuel stocks are displayed in Table 5. The decline in coal stocks in mid-1981 was occasioned by a coal strike settled in June of that year.

Historical Behavior of Sectoral Requirements

Since the 1973 OPEC oil embargo and because of the escalation of energy prices, the pattern of electricity consumption in Ohio has changed dramatically. Increasing prices have stimulated conservation activities and fostered economic conditions that have resulted in reduced growth rates in the demand for electricity. For the twelve month period ending in August 1983, total electricity consumption in the state was 4.2 percent lower than during the preceding twelve month period (see Table 6 and (Figures 5A, 5B), though consumption has shown some signs of increase in recent months. Comparing 1981-82 with 1982-83 usage, residential sector consumption declined 2.6 percent, commercial sector consumption increased 0.3 percent and industrial sector consumption declined 6.5 percent.

Electric consumption by the residential and commercial sectors exhibits regular seasonal patterns while the industrial sector fluctuates widely with general economic conditions. (See Appendix A). The mild winter of 1982-83 resulted in decreased residential sector demand, particularly during the months of January through March (Table 6 and Figure 5A). In December 1982 industrial electricity consumption dipped lower than any previously recorded consumption level since January 1971. A severe downturn in the manufacturing sector, particularly in automobile-related industries, has resulted in a monthly industrial demand level of 3100 to 3400 megawatt-hours. It appears, however, that monthly consumption of electricity by the industrial sector is increasing with the current economic recovery. The August consumption of 3542 megawatt-hours is the highest monthly industrial consumption since November 1982.

Twelve Month Electricity Demand Forecasts

Each electric utility submits a forecast of total service area demand for November 1983 through November 1984. These forecasts are displayed in Appendix A, Tables A-1 through A-8, along with independent forecasts prepared by the Ohio Division of Energy. The Ohio Division of Energy also prepares independent twelve month forecasts of electricity demand for the state of Ohio, by sector.

These forecasts are displayed in Appendix A, Tables A-9 through A-12.

Electric Demand Forecasts by Utility Service Area

The Ohio Division of Energy utility service area forecasts are based on monthly data from utility reports from January 1970 through August 1983. No independent forecast is provided for OVEC, because this utility has only one customer whose demand is pre-arranged. Because of the overlapping months for utility forecasts submitted on July 1 and November 1, the utilities may elect to use their previous forecasts for those overlapping months in the new forecasting period.

Three utilities retained their forecasts submitted in July, for the months November 1983 through June 1984. Four utilities adjusted their forecasts for these eight months. Cincinnati Gas and Electric, Cleveland Electric Illuminating, and Allegheny Power System adjusted their forecasts downward by an average of 5.1, 0.6 and 4.7 percent, respectively. Toledo Edison has adjusted its November forecast upward by 4.2 percent and its December forecast downward by 3.3 percent while leaving the other six months unchanged.

The forecasts prepared by ODOE have been revised upward, since July, reflecting the economic upturn of the third quarter. The ODOE forecast for each month is higher than the corresponding forecast of Cleveland Electric Illuminating, Cincinnati Gas and Electric, Dayton Power and Light, and Ohio Edison. Allegheny Power System, American Electric Power, and Toledo Edison have submitted forecasts that are higher than ODOE's forecast for some months and lower than ODOE's forecast for some months. (See Appendix A).

Assessment of Utility Fuel Adequacy

Tables 7-A and 7-B present the utilities' projections of deliveries, consumption, and end-of-month stocks of coal and oil for the generation of electricity. Table 7-C presents the Division's independent assessment of the adequacy of supply of generating fuels. The Division's projections are presented for the CAPCO Group of utilities, which include Cleveland Electric Illuminating, Ohio Edison, and Toledo Edison; for the American Electric Power and Allegheny Power Systems, and for Dayton Power and Light, Cincinnati Gas and Electric, and the Ohio Valley Electric Corporation.

Coal

The Division's projections as well as those of the electric utilities indicate an adequate supply of coal throughout the forecast period for each utility serving the state.

To derive the Ohio Division of Energy projections, average daily requirements of coal were determined by dividing projected monthly coal consumption by the number of days in the month. End-of-month stocks were derived by considering consecutively end of June 1983 stocks, projected monthly coal delivery schedules as submitted by the utilities, and projected monthly coal consumption levels. Number of days' supply of coal was estimated on the basis of average daily requirements in subsequent months and the level of end-of-month stocks for the month in question.

Coal consumption projections were made through the use of a formula which adjusts coal consumption levels for changes in the consumption of oil, natural gas, and nuclear fuel in a manner that is consistent with the projected demand or net energy for load. In making these projections, it is assumed that the following conditions will be satisfied:

1. Monthly demand (net energy for load) for July 1983 through June 1984 will be realized in the manner projected by the utility companies.
2. Energy required to supply projected net energy for load in a given month from July 1983 through June 1984 will be proportional to the energy consumed in supplying the actual net energy for load in the previous twelve month period.
3. Monthly delivery schedules for all fuels in 1983 and 1984 will be met in the manner projected by the utility companies.

Oil

Each electric utility forecasts an adequate supply of oil for the generation of electricity throughout the forecast period. The Division's projections indicate an adequate supply of oil as well. Negative values for end-of-month stocks of oil as displayed in Table 7C are misleading, in light of the continuing decline in the amount of electricity generated by oil that is anticipated this year, and the availability of oil on the spot market. The Division will closely monitor the monthly oil stocks of the Allegheny Power System and Cincinnati Gas and Electric Company throughout the forecast period to ensure their adequacy.

Month	1	2	3	4	6	7 & 8	9	Other	Total
1981									
January	----	137.9	82.7	2,241.6	270.6	1,269.2	106.7	319.4	4,428.1
February	----	178.5	91.2	2,063.3	242.3	1,120.4	37.3	196.4	3,929.8
March	----	193.2	137.2	2,333.0	125.5	1,304.2	19.1	332.3	4,444.5
April	----	98.8	41.7	372.4	20.0	664.4	14.4	51.4	1,263.1
May	----	75.9	4.4	422.7	--------	753.8	1.5	-------	1,258.3
June	-----	75.3	9.1	1,576.2	190.2	1,137.3	23.9	-------	3,012.9
July	-----	157.6	63.6	2,247.1	242.7	874.4	42.4	238.6	3,866.4
August	-----	174.5	76.0	2,351.3	361.9	1,191.5	49.9	376.7	4,581.8
September	----	171.6	30.8	2,386.8	296.3	985.4	124.7	289.0	4,284.6
October	----	201.0	21.6	2,648.6	346.2	1,161.1	71.3	276.4	4,726.2
November	----	170.5	12.1	2,504.1	307.9	1,101.0	91.4	241.1	4,428.1
December	10.9	135.5	281.1	2,309.2	120.0	835.9	215.3	483.3	4,138.3
Total	10.9	1,770.3	598.5	23,456.3	2,523.7	12,398.6	798.3	2,804.6	44,361.2
% of Total	0.0	4.0	2.0	52.9	5.7	28.0	1.8	6.3	
1982									
January	----	120.4	23.9	2,019.3	222.7	1,097.7	103.7	200.2	3,795.9
February	----	123.0	19.4	2,137.4	388.2	1,187.4	51.2	191.7	4,098.3
March	----	173.4	27.9	2,303.4	382.9	1,505.2	56.7	237.9	4,687.4
April	----	136.9	37.3	2,031.0	237.3	1,457.9	109.8	168.8	4,179.0
May	----	109.5	40.3	1,554.9	200.8	1,058.5	28.6	150.8	3,143.4
June	0.7	121.7	31.0	1,976.6	170.0	1,090.1	97.3	134.0	3,621.4
July	----	139.0	12.5	1,537.3	126.3	590.8	76.4	131.8	2,614.1
August	----	134.7	4.3	1,998.6	317.3	1,299.2	79.6	178.7	4,012.4
September	----	139.2	36.4	1,982.4	205.8	1,094.8	67.5	184.8	3,790.9
October	----	173.4	7.1	1,879.1	346.1	859.7	77.6	64.4	3,407.4
November	----	205.9	33.1	1,973.1	306.1	1,202.3	118.2	58.2	3,896.9
December	----	136.0	42.3	1,770.8	297.8	1,106.2	100.2	161.4	3,614.7
Total	0.7	1,721.1	315.5	23,163.9	3,281.3	13,549.8	966.8	1,862.7	44,861.8
% of Total		3.8	0.7	51.6	7.3	30.2	2.2	4.2	
1983									
January	----	105.8	37.9	1,865.6	292.9	938.4	62.2	239.7	3,542.5
February	----	76.0	25.0	1,608.6	291.9	793.3	9.0	102.1	2,905.9
March	----	109.1	9.1	1,274.6	349.9	973.2	5.8	98.7	2,820.4
April	----	85.5	14.7	1,438.8	240.0	685.5	12.0	--------	2,476.5
May	----	166.3	26.7	1,937.3	264.2	1,003.2	4.4	1.5	3,403.6
June	----	160.7	38.0	1,945.5	140.5	991.0	29.9	6.3	3,311.9
July	----	172.4	37.5	1,792.4	73.6	872.4	58.7	--------	3,007.0
August	----	267.1	56.6	2,172.1	185.5	1,234.3	48.7	4.4	3,968.7

District

1. Eastern Pennsylvania
2. Western Pennsylvania
3. Northern West Virginia
4. Ohio
6. Pandhandle in West Virginia
7. Southern No. 1 (in West Virginia and Virginia)
8. Southern No. 2 (in West Virginia and Eastern Kentucky)
9. Western Kentucky

Other - Primarily from Wyoming and Utah

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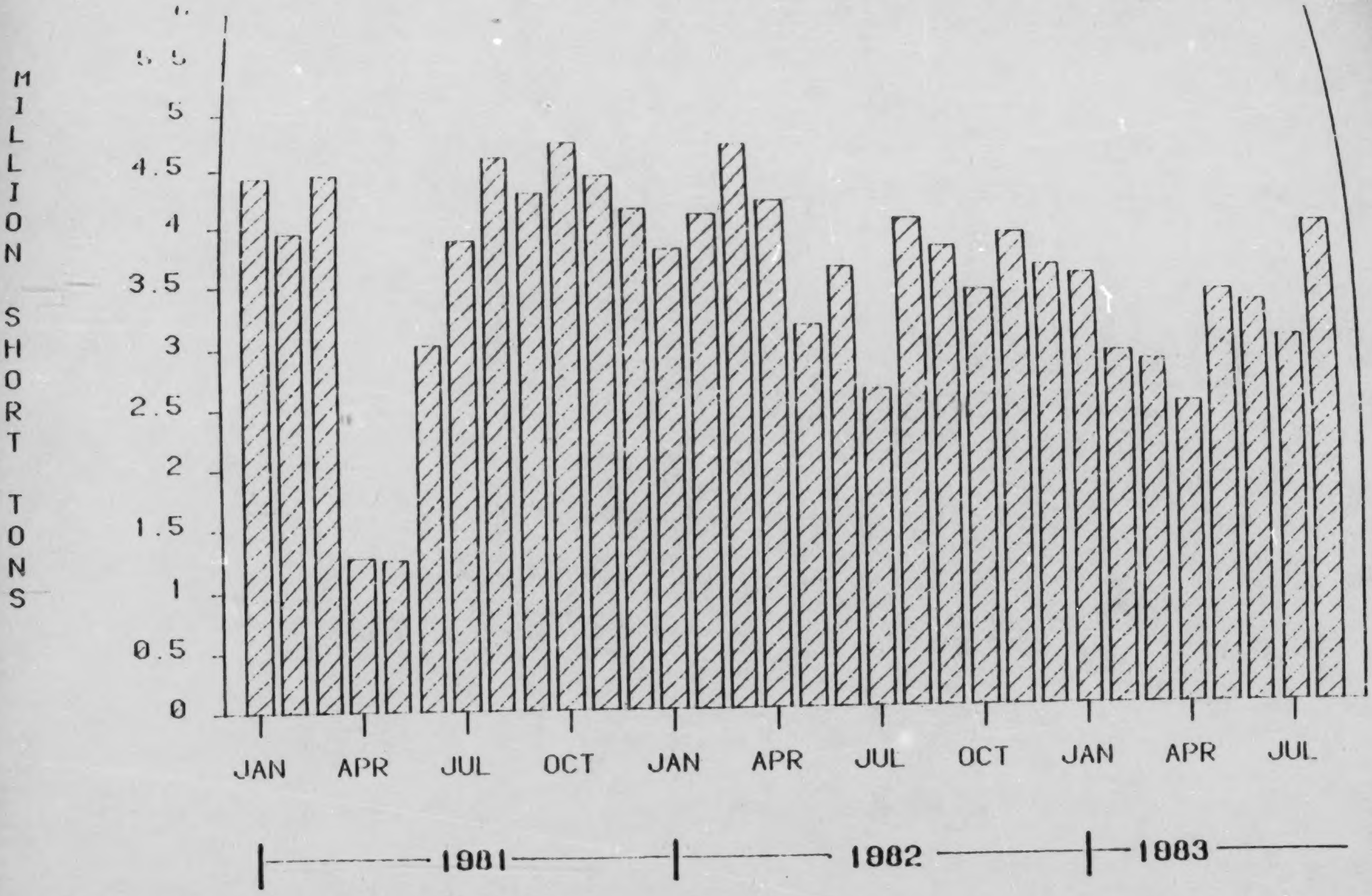


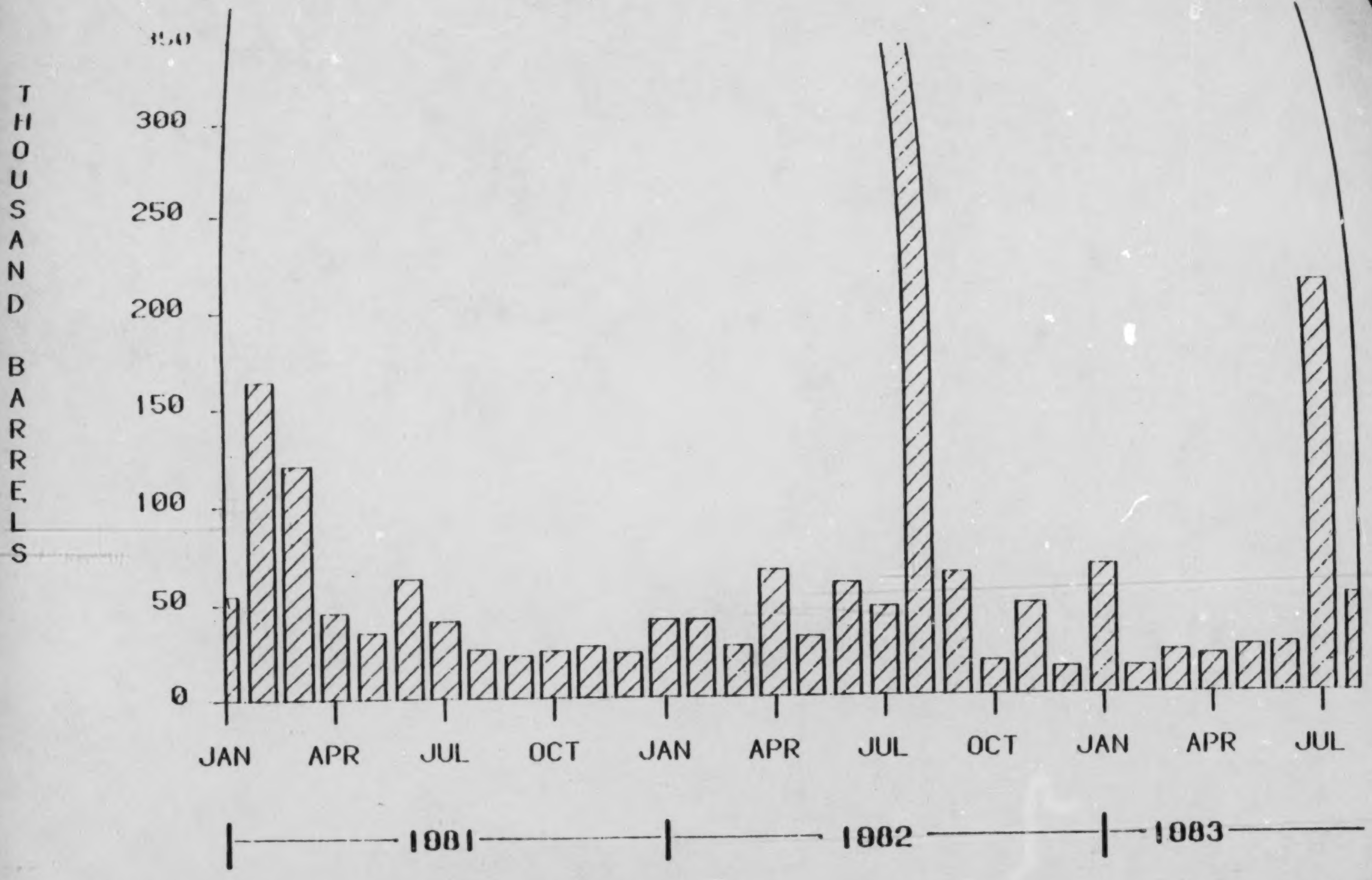
SOURCE: OHIO DIVISION OF ENERGY.

Table 3. Major Oil Suppliers to Electric Utilities
(Ohio Portion)
(Thousand Barrels)

	Allied	Marathon	McCarthy	Standard	Union	Other	Total
[illegible]							
January	32.6	1.0	---	0.7	3.6	16.0	53.9
February	141.8	---	---	4.0	2.6	15.6	164.0
March	93.8	0.2	---	4.5	4.9	17.9	121.3
April	36.4	0.2	---	4.4	1.8	2.3	45.1
May	28.5	0.2	---	3.4	2.5	0.7	35.3
June	53.4	---	---	4.7	2.6	1.1	61.8
July	31.8	0.2	---	5.3	2.4	0.8	40.5
August	22.0	---	---	3.9	---	0.2	26.1
September	16.5	---	---	3.4	1.7	1.0	22.6
October	15.8	---	---	4.7	2.2	1.7	24.4
November	20.0	0.1	---	5.0	1.7	0.1	26.9
December	16.0	0.5	---	4.3	2.2	---	23.0
Total	508.6	2.4	0.0	48.3	28.2	57.4	644.9
% of Total	78.9	0.4	0.0	7.5	4.4	8.9	
[illegible]							
January	35.9	0.2	---	2.8	1.8	---	40.7
February	34.7	0.2	---	2.3	2.9	---	40.1
March	21.8	---	---	3.4	1.5	---	26.7
April	62.3	---	---	1.8	0.9	---	65.2
May	26.8	---	---	2.3	2.2	---	31.3
June	50.6	---	---	6.5	1.8	---	58.9
July	35.7	0.2	---	7.9	2.3	---	46.1
August	140.2	---	---	204.6	2.8	---	347.6
September	58.5	0.6	---	3.4	1.2	---	63.7
October	13.5	---	---	2.5	1.7	---	17.7
November	42.2	---	---	2.5	3.0	---	47.7
December	9.1	---	---	1.9	2.8	---	14.1
Total	531.3	1.2	---	241.9	24.9	---	799.3
% of Total	66.5	0.2	---	30.2	3.1	---	
[illegible]							
January	36.5	18.1	---	9.1	3.0	---	66.7
February	7.3	0.2	---	5.2	2.0	---	14.7
March	7.0	0.6	---	11.1	2.0	2.0	22.7
April	6.8	0.2	---	9.5	2.0	1.0	19.5
May	9.2	0.4	---	8.5	4.0	2.1	24.2
June	10.9	---	---	11.0	4.0	---	25.9
July	11.5	0.2	---	6.7	3.0	---	21.4
August	38.8	0.4	---	4.0	3.0	5.2	51.4

SOURCE: Form FPC 4 and the Ohio Division of Energy

[illegible]



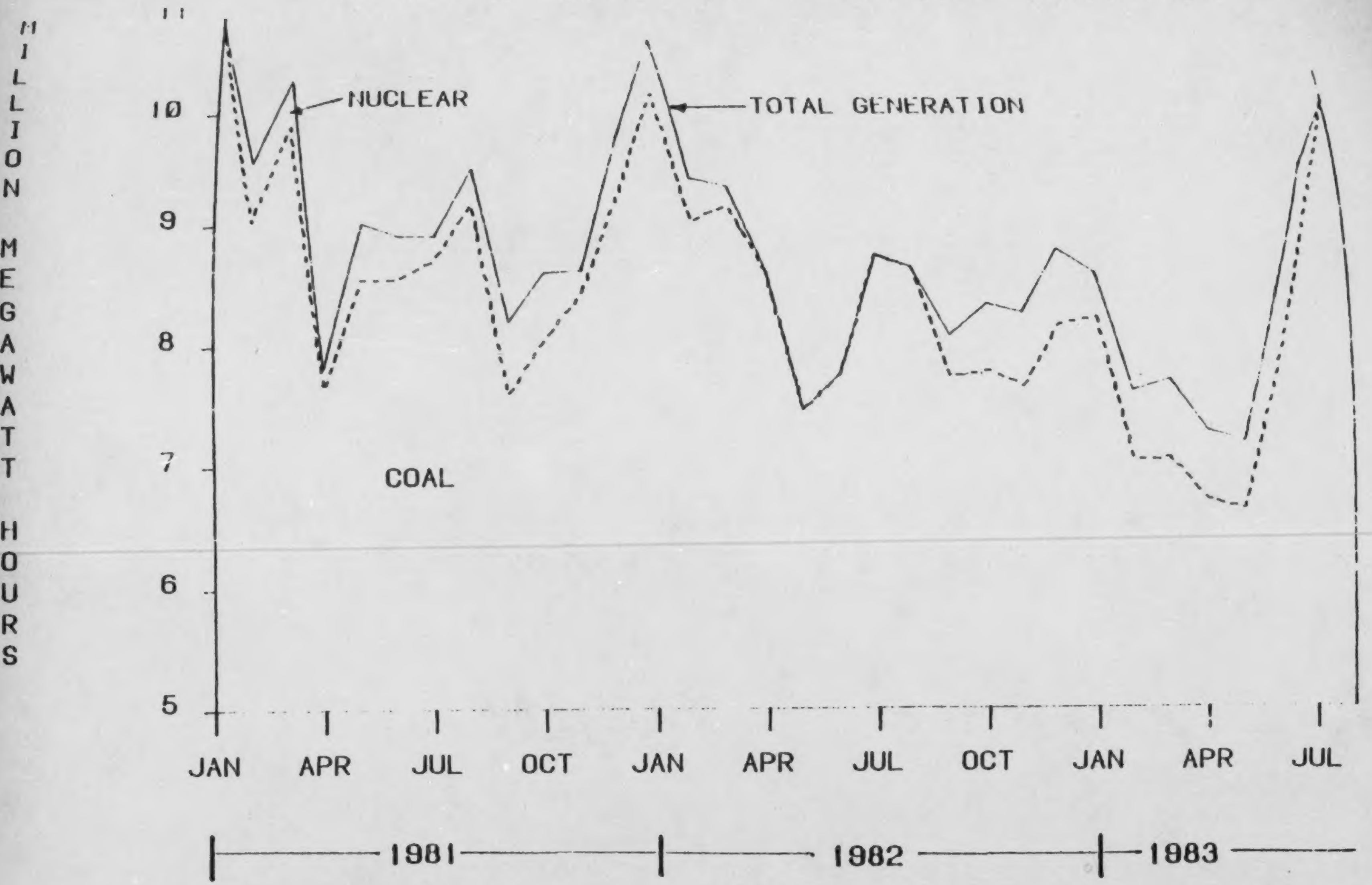
SOURCE: OHIO DIVISION OF ENERGY.

Table 4. Major Ohio Utilities - Net Generation by Type of Fuel (Ohio Portion)
(Thousand MWH)

	Coal	Oil	Gas	Nuclear	Total
1981					
January	10,364	38	8	58	10,968
February	9,032	23	7	513	9,576
March	9,876	31	13	451	10,371
April	7,646	3	2	160	7,810
May	8,547	19	10	477	9,054
June	8,555	18	11	363	8,947
July	8,711	17	12	200	8,941
August	9,186	5	1	313	9,505
September	7,596	4	2	607	8,209
October	8,050	4	1	548	8,603
November	8,426	4	1	189	8,621
December	9,258	2	.5	526	9,786
Total	105,747	168	68.5	4,405	110,391
% of Total	95.8%	0.2%	0.1%	4.0%	
1982					
January	10,194	27	3	576	10,799
February	9,026	6	2	386	9,420
March	9,170	8	3	165	9,347
April	8,593	14	3	0	8,610
May	7,464	13	3	0	7,479
June	7,750	6	0	0	7,756
July	8,741	11	5	0	8,757
August	8,627	12	3	0	8,642
September	7,726	8	1	343	8,078
October	7,778	2	1	537	8,318
November	7,653	2	0	604	8,260
December	8,165	--	0	615	8,780
Total	100,387	109	24	3,226	104,246
% of Total	96.78%	0.1%	0.0%	3.1%	
1983					
January	8,219	-3	1	357	8,574
February	7,041	-1	0	560	7,600
March	7,055	1	1	647	7,705
April	6,716	3	1	574	7,299
May	6,630	4	-9	567	7,202
June	7,322	7	2	567	8,397
July	9,114	9	4	370	9,497
August	10,124	16	3	0	10,143

SOURCE: Form FPC 4 and the Ohio Division of Energy

[illegible]



SOURCE: OHIO DIVISION OF ENERGY.

Table 5. Major Ohio Electric Utilities
Fuel Consumption and Stocks
(Ohio Portion)

	Coal (Thousand Tons)		Oil (Thousand 42-Gal. Bbls.)		Gas (MMCF)
	Burned	In Stock	Burned	In Stock	Burned
1981					
January	4,906.0	12,454.4	143.3	1,055.4	166
February	4,104.6	12,373.3	111.8	1,099.1	164
March	4,456.5	12,454.5	112.2	1,174.3	121
April	3,458.7	10,302.7	70.4	1,154.3	63
May	3,937.0	7,537.9	107.6	1,116.7	119
June	3,971.2	6,742.2	89.0	1,106.0	190
July	3,688.0	6,350.0	99.5	889.6	271
August	4,189.7	7,377.8	60.3	880.1	52
September	3,449.9	8,310.6	51.2	865.6	69
October	3,556.2	9,446.1	61.8	851.5	61
November	3,714.3	10,248.7	71.8	815.8	40
December	4,156.8	10,115.6	57.2	805.8	42
Total	47,589.7	--------	1,036.1	--------	1,358
Avg. Month	3,965.8	9,477.1	86.4	984.5	113
1982					
January	4,629.5	9,351.6	147.9	735.8	119.0
February	4,334.6	9,241.2	71.1	721.3	59.0
March	4,072.6	9,866.8	67.0	723.1	68.0
April	3,832.1	10,153.7	74.1	762.0	73.0
May	3,191.5	10,304.0	75.0	698.4	38.0
June	3,412.2	10,762.3	78.7	733.2	23.0
July	4,023.2	9,239.8	61.8	755.0	25.0
August	3,880.1	9,147.0	74.2	716.6	85.0
September	3,494.3	9,630.0	51.9	779.2	35.4
October	3,453.1	9,814.9	55.7	744.3	34.0
November	3,271.3	9,563.6	72.1	1,456.5	35.4
December	3,591.4	10,082.9	36.5	1,074.5	24.7
Total	45,185.9	117,157.8	866.0	9,899.9	519.5
Avg/Month	3,765.0	9,763.0	72.0	825.0	51.6
1983					
January	3,582.2	9,807.8	51.1	1,470.5	45.5
February	3,068.6	9,694.0	43.5	1,468.1	17.0
March	3,076.2	9,378.9	39.7	1,468.5	42.5
April	2.920.4	9,649.2	48.8	624.9	39.6
May	2,851.0	10,308.8	52.9	410.5	25.6
June	3,347.7	10,363.6	45.3	386.0	68.6
July	3,953.3	9,440.7	57.7	378.4	36.5
August	4,416.1	9,038.8	64.0	365.0	76.5

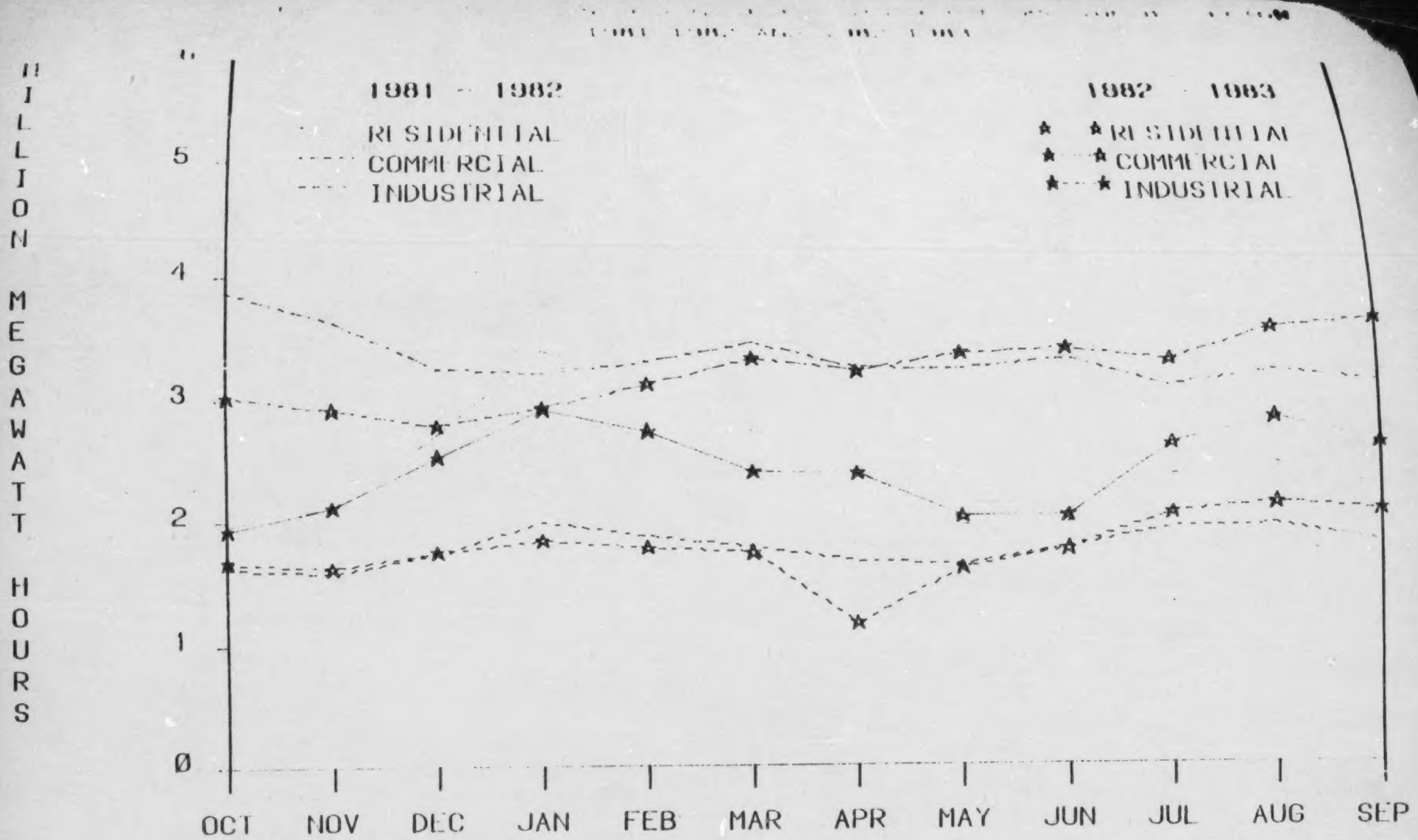
SOURCE: Form FPC 4 and the Ohio Division of Energy

Table 6. Ohio Electricity Consumption
September 1982 - August 1983
(Thousand MWH)

	September	October	November	December	January	February	March	April	May	June	July	August	Total
Residential													
1982-83	2,052.2	1,943.4	2,113.9	2,527.4	2,909.8	2 725.6	2,390.5	2,378.3	2,016.9	2,023.7	2,603.0	2,817.6	28,502.3
1981-83	2,197.2	1,960.3	2,112.4	2,707.2	3,375.9	3,106.1	2,712.5	2,712.5	2,392.7	1,964.8	2,345.8	2,440.8	29,268.9
% Change	-6.6	-0.9	0.1	-6.6	-13.8	-12.2	-11.9	-0.6	3.3	3.0	11.0	15.4	-2.6
Commercial													
1982-83	1,805.8	1,673.0	1,624.5	1,743.6	1,838.6	1,778.8	1,739.6	1,661.4	1,604.0	1,758.9	2,047.1	2,125.4	21,400.7
1981-82	1,849.5	1,621.2	1,581.2	1,733.3	1,955.4	1,872.6	1,781.2	1,666.8	1,632.7	1,770.5	1,925.7	1,946.0	21,336.1
% Change	-2.4	3.2	2.7	0.6	-6.0	-5.0	-2.3	-0.3	-1.8	-.7	6.3	9.2	0.3
Industrial													
1982-83	3,107.5	3,014.8	2,910.7	2,779.2	2,921.2	3,102.7	3,301.5	3,201.3	3,342.5	3,374.8	3,280.9	3,542.1	37,878.2
1981-82	3,843.9	3,875.3	3,617.7	3,236.0	3,197.7	3,285.7	3,428.8	3,228.9	3,217.5	3,295.3	3,075.7	3,196.4	40,498.9
% Change	-19.2	-22.2	-19.5	-14.1	-8.6	-5.6	-3.7	-0.9	3.9	2.4	6.7	10.8	-6.5
Other													
1982-83	395.0	424.7	441.4	469.2	487.2	451.5	450.6	399.4	386.0	404.8	410.2	437.6	5,157.6
1981-83	408.3	421.1	447.5	490.7	507.0	499.6	491.6	438.8	408.8	423.5	399.1	396.7	5,332.7
% Change	-3.3	0.9	-1.4	-4.3	-3.9	-9.6	-8.3	-9.0	-5.6	-4.4	2.8	10.3	-3.3
Total													
1982-83	7,360.5	7,055.9	7,090.5	7,519.4	8,156.8	8,058.6	7,882.2	7,140.4	7,349.4	7,562.3	8,341.4	8,922.8	92,440.2
1981-82	8,298.4	7,887.9	7,758.8	8,167.2	9,036.0	8,764.0	8,414.1	7,727.2	7,212.2	7,454.5	7,746.3	7,980.0	96,436.6
% Change	-11.3	-10.4	-8.6	-7.9	-9.7	-8.0	-6.3	-7.6	1.9	1.5	7.7	11.8	-4.2
Customers(000)													
Residential	3,452.0	3,454.6	3,459.3	3,464.7	3,469.8	3,473.3	3,474.3	3,474.6	Not Available	3,469.5	3,466.7	3,467.6	
Commercial	354.0	354.2	354.4	354.4	354.4	354.5	354.8	355.8		356.1	356.1	356.2	
Industrial	24.5	24.6	24.6	24.6	24.6	24.7	24.8	24.8		24.8	24.8	24.7	
Total	3,830.6	3,833.0	3,838.3	3,843.8	3,848.8	3,852.5	3,853.9	3,855.2		3,850.3	3,847.6	3,878.6	

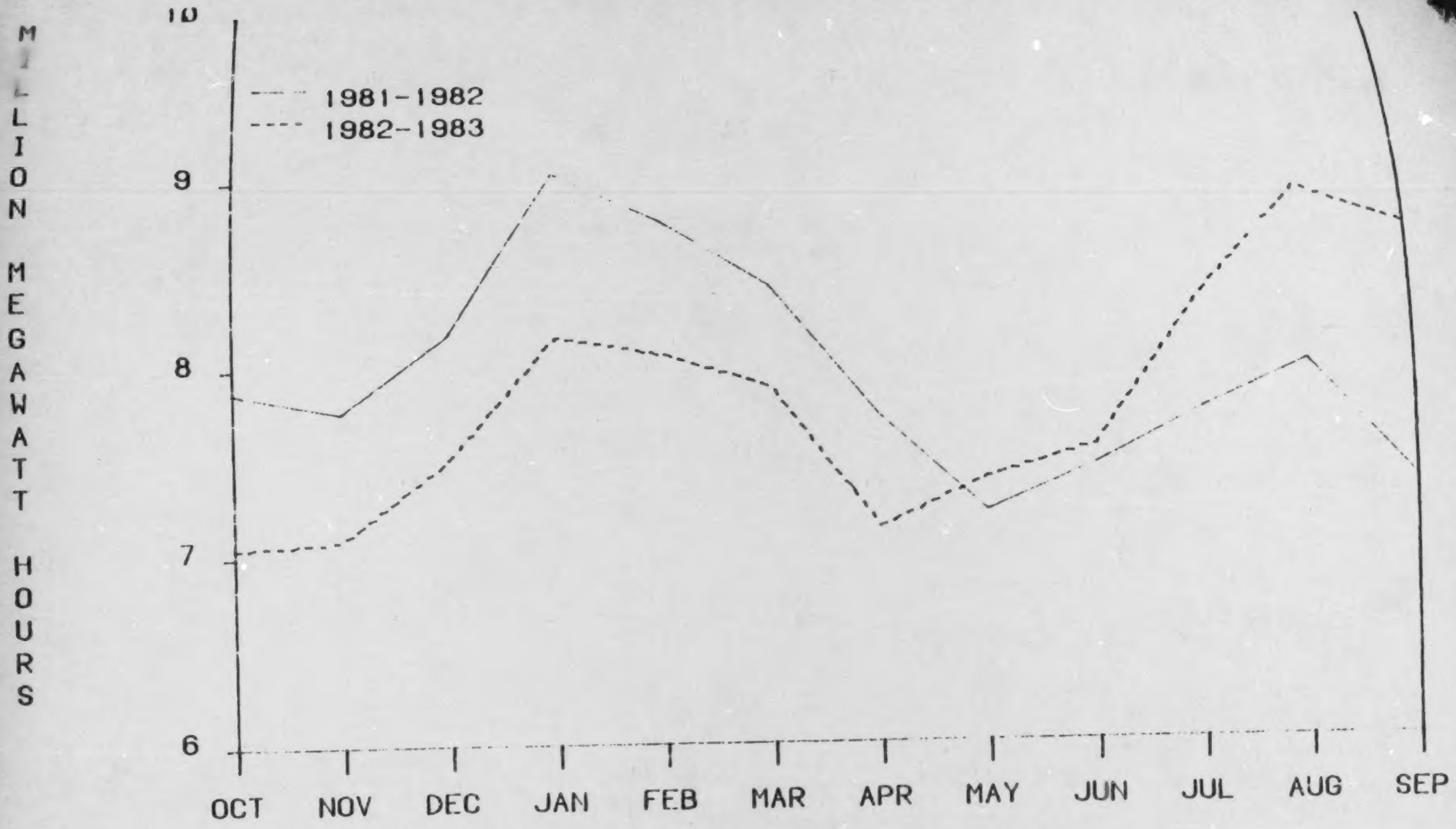
Note:
(1) Percentage change is from the same period of the previous year (1981-82).
(2) Excludes sales to other utilities.
(3) Figures may not add to exact totals because of independent rounding.
(4) Figures reported include CG&E, CEI, C&SOE, DP&L, Monongahela Power, Ohio Edison, Ohio Power and Toledo Edison.

Source: Ohio Electric Utility Institute's Monthly Summaries.



SOURCE: OHIO DIVISION OF ENERGY

FIGURE [illegible] OHIO TOTAL ELECTRICITY CONSUMPTION,
1981-1982 AND 1982-1983



SOURCE: OHIO DIVISION OF ENERGY.

Table 7-A. Ohio Electric Utilities' Projected Deliveries, Consumption, and Stocks of Coal for Electricity Generation, 1983-1984, (1000 Short Tons)

	Nov.	Dec.	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.
Allegheny Power System												
Deliveries	1,343.0	1,343.0	1,277.9	1,277.9	1,277.9	1,277.9	1,277.9	1,277.9	1,277.9	1,277.9	1,277.9	1,277.9
Consumption	1,291.6	1,395.0	1,362.4	1,271.1	1,331.4	1,197.6	1,233.7	1,193.3	1,291.4	1,331.5	1,184.8	1,319.8
Stocks	3,314.0	3,262.0	3,177.0	3.184.2	3,130.7	3,211.0	3,255.2	3,339.8	3,326.4	3,272.8	3,365.9	3,324.0
American Electric Power												
Deliveries	3,200.0	3,314.0	3,461.0	3,455.0	3,438.0	3,311.0	3,532.0	2,880.0	2,860.0	3,572.0	3,303.0	3,615.0
Consumption	2,822.0	3,069.0	3,519.0	3,328.0	3,333.0	2,820.0	2,610.0	3,077.0	3,134.0	3,187.0	2,881.0	2,695.0
Stocks	11,267.0	11,512.0	11,454.0	11,581.0	11,686.0	12,177.0	13,099.0	12,902.0	12,628.0	13,013.0	13,435.0	14,355.0
Cincinnati Gas & Electric												
Deliveries	600.0	600.0	563.5	503.1	535.7	478.9	467.6	509.3	607.4	629.7	584.7	100.0
Consumption	515.9	585.1	523.5	463.1	495.7	438.9	427.6	469.3	537.4	569.7	524.7	482.8
Stocks	1,284.1	1,299.0	1,339.0	1,379.0	1,419.0	1,459.0	1,499.0	1,539.0	1,609.0	1,669.0	1,729.0	1,346.2
Cleveland Electric Illuminating												
Deliveries	415.9	457.7	504.0	479.4	511.2	448.9	510.0	519.7	535.8	615.0	580.0	182.8
Consumption	415.9	457.7	504.0	479.4	511.2	448.9	461.0	472.7	488.8	568.0	533.0	532.8
Stocks	75.1	947.4	947.4	947.4	947.4	947.4	996.4	1,043.4	1,090.4	1,137.4	1,184.4	834.4
Dayton Power & Light												
Deliveries	673.0	635.0	657.0	612.0	775.0	735.0	706.0	718.0	366.0	736.0	33.0	168.0
Consumption	562.0	641.0	674.0	618.0	545.0	542.0	570.0	574.0	578.0	577.0	474.0	514.0
Stocks	1,447.0	1,441.0	1,425.0	1,419.0	1,647.0	1,840.0	1,976.0	2,120.0	1,908.0	2,068.0	1,628.0	1,282.0
Ohio Edison System												
Deliveries	802.7	868.5	1,033.9	922.6	890.1	883.0	912.2	979.4	1,048.2	1,080.5	985.4	795.4
Consumption	809.2	846.7	1,001.8	866.6	843.6	775.9	788.7	870.4	925.1	1,010.0	808.6	880.4
Stocks	2,270.6	2,292.3	2,324.3	2,380.4	2,426.9	2,533.9	2,657.4	2,766.5	2,889.5	2,960.0	3,136.8	3,051.7
Ohio Valley Electric Corp.												
Deliveries	545.0	569.0	577.0	526.0	549.0	553.0	588.0	552.0	615.0	619.0	554.0	530.0
Consumption	567.0	591.0	600.0	548.0	571.0	576.0	610.0	574.0	638.0	641.0	576.0	553.0
Stocks	1,476.0	1,453.0	1,431.0	1,409.0	1,386.0	1,364.0	1,342.0	1,319.0	1,297.0	1,275.0	1,252.0	1,230.0
Toledo Edison Co.												
Deliveries	165.0	150.0	184.0	174.0	166.0	142.0	135.0	144.0	144.0	242.0	232.0	233.0
Consumption	153.0	162.0	184.0	174.0	166.0	142.0	135.0	144.0	144.0	242.0	232.0	233.0
Stocks	332.0	320.0	320.0	320.0	320.0	320.0	320.0	320.0	320.0	320.0	320.0	320.0

Source: ODOE Form SE-3A.

Table 7.8 Ohio Electric Utilities' Projected Deliveries, Consumption, and Stocks of Oil for Electricity Consumption, 1983-1984 (1000 Bbls.)

	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sep.	Oct.
Allegheny Power System												
Deliveries	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Consumption	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Stocks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
American Electric Power												
Deliveries	44.0	50.0	53.0	52.0	43.0	47.0	45.0	44.0	47.0	50.0	40.0	40.0
Consumption	44.0	50.0	53.0	52.0	43.0	47.0	45.0	44.0	47.0	50.0	40.0	40.0
Stocks	199.0	199.0	199.0	199.0	199.0	199.0	199.0	199.0	199.0	199.0	199.0	199.0
Cincinnati Gas & Electric												
Deliveries	8.0	8.0	8.0	16.0	8.0	16.0	8.0	16.0	8.0	16.0	8.0	16.0
Consumption	6.6	10.7	5.9	9.4	9.6	17.6	8.7	13.2	12.1	12.6	8.1	15.6
Stocks	61.4	58.7	60.8	67.4	65.8	64.2	63.5	66.3	62.2	65.6	65.5	65.9
Cleveland Electric Illuminating												
Deliveries	42.0	27.3	11.9	35.9	34.1	10.2	38.0	10.7	18.4	38.6	32.0	9.9
Consumption	42.0	27.3	11.9	35.9	34.1	10.2	38.0	10.7	18.4	38.6	32.0	9.9
Stocks	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1	75.1
Dayton Power and Light												
Deliveries	2.0	2.0	2.0	2.0	142.0	2.0	2.0	2.0	2.0	2.0	29.0	2.0
Consumption	9.0	28.0	51.0	45.0	11.0	6.0	4.0	6.0	7.0	7.0	9.0	12.0
Stocks	396.0	370.0	322.0	278.0	410.0	406.0	404.0	400.0	395.0	390.0	410.0	401.0
Ohio Edison												
Deliveries	0.0	8.2	7.1	5.0	8.5	4.5	1.9	6.5	5.0	4.4	6.4	6.5
Consumption	0.0	8.2	7.1	5.0	8.5	4.5	1.9	6.5	5.0	4.4	6.4	6.5
Stocks	40.3	40.3	40.3	40.3	40.3	40.0	40.3	40.3	40.3	40.3	40.3	40.3
Ohio Valley Electric Corp.												
Deliveries	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Consumption	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
Stocks	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Toledo Edison												
Deliveries	354.0	364.0	158.0	231.0	274.0	152.0	106.0	139.0	159.0	323.0	332.0	125.0
Consumption	416.0	364.0	158.0	231.0	274.0	152.0	106.0	139.0	159.0	323.0	332.0	125.0
Stocks	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0	990.0

Source: ODOE Form SE-3A.

Table [illegible] Electric Utilities Demand Forecast, Fuel Assessment, and Inventory Model
([illegible] [illegible]) ([illegible])

ALLEGHENY POWER SYSTEM

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	2592.2	2885.9	3213.3	2755.1	2783.5	2481.6	2532.0	2519.4	2609.4	2692.3	2509.0	2669.9	32234.3
EST DEMAND GEN BY COAL	2877.3	3203.4	3566.7	3058.2	3089.7	2754.6	2310.5	2790.9	2896.4	3176.9	2961.6	3144.6	36350.7
EST DEMAND GEN BY OIL	2.6	2.9	0.0	0.0	0.0	0.0	2.5	0.0	0.0	2.7	0.0	2.7	13.4
PROJ DAILY CONSUMPTION													
COAL (KTONS)	39.41	42.46	47.28	44.88	40.95	37.73	37.25	38.23	38.39	42.11	40.56	41.68	
OIL (KBBL)	0.22	0.24	0.0	0.0	0.0	0.0	0.21	0.0	0.0	0.22	0.0	0.22	
COAL DELIVERIES (KTONS)	1343.0	1343.0	1277.9	1277.9	1277.9	1277.9	1277.9	1277.9	1277.9	1277.9	1277.9	1277.9	15465.0
OIL DELIVERIES (KBBL)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
END OF MONTH STOCK													
COAL (KTONS)	3423.6	3450.3	3262.7	3284.0	3292.3	3438.4	3561.5	3692.6	3780.4	3752.9	3813.9	3799.7	
OIL (KBBL)	-6.7	-14.1	-14.1	-14.1	-14.1	-14.1	-20.7	-20.7	-20.7	-27.6	-27.6	-34.5	
NUMBER OF DAYS SUPPLY													
COAL	76.	77.	79.	85.	87.	91.	98.	92.	91.	91.	92.	91.	
OIL	-28.	53.	22.	-6.	-37.	-67.	-31.	-61.	-92.	-94.	-124.	-155.	

AMERICAN ELECTRIC POWER SYSTEM

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	6539.0	7315.0	8096.0	7367.0	7120.0	6235.0	6104.0	6193.0	6618.0	6796.0	6226.0	6482.0	81145.9
EST DEMAND GEN BY COAL	6918.4	8851.1	9148.5	7956.4	8045.6	7045.5	7630.0	7127.7	7544.5	7135.8	5317.0	5535.6	88256.1
EST DEMAND GEN BY OIL	0.0	0.0	8.1	0.0	7.1	0.0	6.1	0.0	0.0	0.0	0.0	0.0	21.3
PROJ DAILY CONSUMPTION													
COAL (KTONS)	107.72	133.37	137.85	132.73	121.23	109.70	114.97	110.98	113.68	107.52	82.79	83.41	
OIL (KBBL)	0.0	0.0	4.55	0.0	4.00	0.0	3.43	0.0	0.0	0.0	0.0	0.0	
COAL DELIVERIES (KTONS)	3200.0	3314.0	3461.0	3455.0	3438.0	3311.0	3532.0	2860.0	2860.0	3572.0	3303.0	3615.0	39941.0
OIL DELIVERIES (KBBL)	44.00	50.00	53.00	52.00	43.00	47.00	45.00	44.00	47.00	50.00	40.00	40.00	555.00
END OF MONTH STOCK													
COAL (KTONS)	******	******	9224.8	8963.4	8643.3	8663.3	8631.3	8187.0	7517.9	7756.8	8576.2	9605.5	
OIL (KBBL)	243.0	293.0	205.1	257.1	176.2	223.2	161.9	205.9	252.9	302.9	342.9	382.9	
NUMBER OF DAYS SUPPLY													
COAL	80.	76.	75.	78.	77.	77.	78.	78.	81.	93.	103.	115.	
OIL	116.	128.	113.	275.	244.	214.	183.	153.	122.	91.	61.	30.	

[illegible]

CINCINNATI GAS & ELECTRIC

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	1193.4	1332.8	1417.4	1269.4	1293.5	1115.2	1208.9	1344.4	1450.9	1475.5	1236.2	1183.9	15521.4
EST DEMAND GEN BY COAL	966.6	1079.5	1148.1	1028.2	1099.5	947.9	1027.5	1142.7	1015.7	1032.8	865.3	828.7	12182.7
EST DEMAND GEN BY OIL	6.0	5.3	4.3	2.5	3.9	2.2	2.4	0.0	0.0	1.5	3.7	2.4	34.2
PROJ DAILY CONSUMPTION													
COAL (KTONS)	14.97	16.18	17.20	17.06	16.47	14.68	15.40	17.69	15.22	15.48	13.40	12.42	
OIL (KBBL)	0.77	0.67	0.53	0.35	0.49	0.29	0.30	0.0	0.0	0.18	0.48	0.30	
COAL DELIVERIES (KTONS)	600.0	600.0	563.5	503.1	535.7	478.9	467.6	0.0	607.4	629.7	584.7	100.0	5670.6
OIL DELIVERIES (KBBL)	8.00	8.00	8.00	16.00	8.00	16.00	8.00	16.00	8.00	16.00	8.00	16.00	136.00
END OF MONTH STOCK													
COAL (KTONS)	987.0	1085.6	1115.8	1141.3	1166.3	1204.9	1195.2	664.4	800.0	949.9	1132.7	847.7	
OIL (KBBL)	41.9	29.2	20.7	26.8	19.8	27.1	25.7	41.7	49.7	60.0	53.6	60.4	
NUMBER OF DAYS SUPPLY													
COAL	59.	64.	68.	73.	75.	74.	73.	43.	55.	74.	91.	68.	
OIL	75.	65.	50.	71.	131.	148.	141.	165.	161.	184.	181.	204.	

CLEVELAND ELECTRIC ILLUMINATING COMPANY

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	1443.0	1562.0	1663.0	1536.0	1583.0	1429.0	1502.0	1535.0	1602.0	1626.0	1475.0	1541.0	18497.0
EST DEMAND GEN BY COAL	937.9	1015.3	1080.9	998.4	1028.9	857.4	901.2	921.0	961.2	975.6	885.0	924.6	11487.5
EST DEMAND GEN BY OIL	28.9	14.1	6.7	12.3	12.7	4.3	7.5	6.1	3.2	4.9	4.4	0.0	105.0
PROJ DAILY CONSUMPTION													
COAL (KTONS)	13.45	14.09	15.00	15.34	14.28	12.30	12.51	13.21	13.34	13.54	12.69	12.83	
OIL (KBBL)	2.13	1.01	0.48	0.97	0.91	0.32	0.54	0.45	0.23	0.35	0.33	0.0	
COAL DELIVERIES (KTONS)	415.9	457.7	504.0	479.4	511.2	448.9	510.0	519.7	535.8	615.0	580.0	182.8	5760.4
OIL DELIVERIES (KBBL)	41.99	27.34	11.86	35.86	34.14	10.25	38.05	10.74	18.41	38.62	32.00	9.91	309.17
END OF MONTH STOCK													
COAL (KTONS)	959.7	980.5	1019.4	1069.2	1137.6	1217.6	1339.8	1463.2	1585.4	1780.6	1979.8	1764.7	
OIL (KBBL)	53.1	49.3	46.4	55.0	61.1	61.8	83.2	80.3	91.6	119.4	141.6	151.5	
NUMBER OF DAYS SUPPLY													
COAL	66.	65.	71.	82.	90.	93.	101.	111.	122.	139.	154.	138.	
OIL	69.	67.	49.	94.	163.	214.	103.	153.	122.	91.	61.	30.	

Table 7.4 Electric Utilities Demand Forecast, Fuel Assessment, and Inventory Model (Run A)
(November [illegible] October [illegible])

DAYTON POWER & LIGHT

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	912.3	1008.9	1102.5	991.5	963.2	815.5	825.8	875.0	956.7	958.5	855.2	893.7	11156.6
EST DEMAND GEN BY COAL	994.4	1099.7	1157.6	1041.0	1049.8	910.7	956.8	936.1	927.7	1707.3	1520.4	670.3	12972.8
EST DEMAND GEN BY OIL	25.5	31.3	30.9	24.8	15.4	10.8	9.1	8.8	21.8	11.4	18.8	10.7	218.4
PROJ DAILY CONSUMPTION													
COAL (KTONS)	15.17	16.24	17.09	17.02	15.50	13.90	14.13	14.29	13.70	25.21	23.20	9.98	
OIL (KBBL)	2.37	2.81	2.78	2.47	1.39	0.93	0.82	0.81	1.96	1.02	1.75	0.96	
COAL DELIVERIES (KTONS)	673.0	635.0	657.0	612.0	775.0	735.0	706.0	718.0	366.0	736.0	33.0	168.0	6814.0
OIL DELIVERIES (KBBL)	2.00	2.00	2.00	2.00	142.00	2.00	2.00	2.00	2.00	2.00	29.00	2.00	191.00
END OF MONTH STOCK													
COAL (KTONS)	1553.8	1685.3	1812.4	1947.8	2242.2	2560.3	2828.2	3117.6	3058.9	3013.3	2350.2	2211.4	
OIL (KBBL)	333.8	248.6	164.6	97.5	196.6	170.6	147.3	125.0	66.3	36.5	13.2	-14.7	
NUMBER OF DAYS SUPPLY													
COAL	93.	104.	120.	135.	143.	144.	172.	215.	221.	264.	237.	223.	
OIL	176.	148.	119.	94.	168.	139.	109.	81.	51.	21.	14.	-15.	

OHIO EDISON SYSTEM

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	1952.7	2064.6	2236.0	2027.5	2042.0	1834.7	1849.6	1882.9	2055.7	2074.7	1913.3	1988.5	23922.2
EST DEMAND GEN BY COAL	1464.5	1651.7	1900.6	1419.2	1327.3	1100.8	1202.2	1242.7	1069.0	829.9	861.0	994.2	15063.2
EST DEMAND GEN BY OIL	5.9	6.2	4.5	4.1	6.1	1.8	3.7	1.9	4.1	2.1	1.9	6.0	48.2
PROJ DAILY CONSUMPTION													
COAL (KTONS)	23.62	25.78	29.67	24.53	20.72	17.76	18.77	20.04	16.69	12.95	13.89	15.52	
OIL (KBBL)	0.42	0.43	0.31	0.31	0.43	0.13	0.26	0.14	0.29	0.15	0.14	0.42	
COAL DELIVERIES (KTONS)	802.7	868.5	1033.9	922.6	890.1	883.0	912.2	979.4	1048.2	1060.5	985.4	795.3	11201.7
OIL DELIVERIES (KBBL)	0.0	8.17	7.09	5.02	8.48	4.50	1.88	6.55	4.95	4.43	6.43	6.50	64.00
END OF MONTH STOCK													
COAL (KTONS)	2364.6	2433.9	2548.0	2783.8	3031.6	3381.9	3712.4	4090.4	4621.3	5300.2	5869.0	6183.2	
OIL (KBBL)	27.6	22.3	19.7	16.0	11.1	11.7	5.5	8.0	4.0	4.0	6.2	-0.2	
NUMBER OF DAYS SUPPLY													
COAL	88.	100.	125.	145.	182.	209.	236.	270.	306.	345.	378.	398.	
OIL	76.	68.	54.	51.	58.	58.	35.	28.	23.	29.	15.	0.	

[illegible]

[illegible]

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	1356.5	1508.6	1550.1	1309.8	1371.5	1372.6	1535.6	[illegible]	[illegible]	[illegible]	[illegible]	1308.7	[illegible]
EST DEMAND GEN BY COAL	1356.5	1555.3	1651.7	1256.6	1302.9	1317.7	1359.5	[illegible]	1355.3	[illegible]	[illegible]	1268.9	[illegible]
EST DEMAND GEN BY OIL	1.5	1.4	0.0	0.0	1.5	1.5	2.9	0.0	1.5	1.5	0.0	1.3	[illegible]
PROJ DAILY CONSUMPTION													
COAL (KTONS)	17.02	20.83	22.27	18.88	17.68	18.47	18.31	18.17	18.24	19.43	18.53	17.22	
OIL (KBBL)	0.09	0.09	0.0	0.0	0.09	0.09	0.19	0.0	0.09	0.09	0.0	0.08	
COAL DELIVERIES (KTONS)	545.0	569.0	577.0	526.0	549.0	553.0	588.0	552.0	615.0	619.0	554.0	530.0	6777.0
OIL DELIVERIES (KBBL)	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	1.70	20.40
END OF MONTH STOCK													
COAL (KTONS)	1472.5	1395.7	1282.2	1279.7	1280.7	1279.4	1299.8	1306.8	1356.3	1373.0	1371.1	1367.3	
OIL (KBBL)	5.0	3.9	5.6	7.3	6.2	5.2	1.1	2.8	1.6	0.4	2.1	1.2	
NUMBER OF DAYS SUPPLY													
COAL	69.	69.	70.	71.	70.	70.	71.	70.	73.	77.	80.	79.	
OIL	115.	102.	89.	71.	49.	28.	42.	30.	17.	35.	25.	14.	

TOLEDO EDISON

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	644.3	665.9	680.5	643.2	690.1	634.6	618.6	627.2	658.1	666.6	627.2	627.2	7783.5
EST DEMAND GEN BY COAL	384.6	407.5	373.6	368.5	412.0	389.6	314.9	279.1	319.2	407.3	442.8	388.2	4507.4
EST DEMAND GEN BY OIL	108.2	111.9	111.6	115.8	149.1	129.5	102.7	124.2	47.4	54.0	45.2	56.4	1155.9
PROJ DAILY CONSUMPTION													
COAL (KTONS)	5.19	5.32	4.88	5.62	5.38	5.26	4.11	3.77	4.17	5.32	5.97	5.07	
OIL (KBBL)	9.41	9.41	9.39	10.78	12.54	11.25	8.64	10.79	3.98	4.54	3.92	4.75	
COAL DELIVERIES (KTONS)	165.0	150.0	184.0	174.0	166.0	142.0	135.0	144.0	144.0	242.0	232.0	233.0	2111.0
OIL DELIVERIES (KBBL)	354.00	364.00	158.00	231.00	274.00	152.00	106.00	139.00	159.00	321.00	332.00	125.00	2717.00
END OF MONTH STOCK													
COAL (KTONS)	329.3	314.3	347.1	363.8	363.1	347.3	354.9	385.9	400.7	477.8	510.6	606.4	
OIL (KBBL)	1123.8	1196.2	1063.2	932.4	877.8	692.3	530.6	345.8	381.3	563.5	777.8	755.6	
NUMBER OF DAYS SUPPLY													
COAL	64.	60.	63.	71.	82.	87	82.	77.	72.	89	105.	120	
OIL	107.	109	91.	92.	86.	86	79	83.	87.	125.	164.	159.	

III. NATURAL GAS

This section presents an overview and forecast of natural gas market conditions in Ohio. First, the distribution and supply system is described followed by an account of historical gas demand. Next a summary of utilities' forecasts and a presentation of the Ohio Division of Energy forecast provide a twelve month outlook. Finally, alternative fuel use is briefly discussed.

A quantitative analysis of historical gas demand patterns which provides the basis for forecasts of demand is referenced in Appendix B.

Distribution and Supply

Service shares of the gas distribution companies operating in Ohio are presented in Table 8 for the annual period September 1982 to August 1983. During this period, the four large distribution companies--Cincinnati Gas and Electric, Columbia Gas of Ohio, Dayton Power and Light, and East Ohio Gas--jointly distributed 93.22 percent of the reported natural gas requirements of the state. The four intermediate-sized companies--National Gas and Oil, Ohio Gas, River Gas, and West Ohio Gas--distributed an additional 4.83 percent. The remaining 1.95 percent of the reported natural gas requirements were distributed by 18 small utilities and two municipal utilities. The figures presented in Table 8 do not include self-help natural gas, which is gas produced by an industrial customer for their own use. Total requirements of 731,459 MMCF reported in Table 8 represent a reduction of approximately 19 percent in the distribution of natural gas compared to the same period last year. The magnitude of the reduction is explained primarily by the severity of the recession of 1982, and the very mild 1982-83 heating season.

The major sources of supplies of natural gas to the state of Ohio are presented in Table 9, and the quantities supplied are shown graphically in Figure 6. From September 1982 through August 1983, the eight major gas distribution companies of Ohio, which together account for 93.05 percent of the reported natural gas distribution in the state, procured 717,224 MMCF of natural gas to meet Ohio's requirements. This represents a 19 percent decrease in the supplies of natural gas to Ohio compared to the same period in the previous twelve months.This decline reflects the reaction of Ohio's gas distribution companies to the declining natural gas requirements of residential, commercial, and especially industrial customers in Ohio.

Of the 717,224 MMCF total procurement, interstate gas purchases and synthetic natural gas (SNG) comprise 91.62 percent (See Table 9). Purchases of Ohio gas comprise the remaining 8.38 percent of the total. The 60,119 MMCF of Ohio production of natural gas purchased by the eight major gas utilities from September 1982 to August 1983 represents a 6.9 percent increase in their purchases of Ohio's product during the preceding annual period. This amount corresponds to approximately 43.3 percent of the state's total production of 138,391 MMCF in calendar year 1982.

Domestic interstate gas is the major source of supply for Ohio. Columbia Gas Transmission Corporation and Consolidated Gas Supply Corporation provided 67.56 percent of the natural gas supplied to the eight major Ohio gas distribution companies from September 1982 through August 1983. No liquified natural gas (LNG) imports were included in these supplies, nor are anticipated by either company as a source of supply for the 1983-84 heating season.

Historical Behavior of Sectoral Gas Requirements[1]

Although no new customer hookups were allowed from 1972 until the passage of the Natural Gas Policy Act in 1978, the number of residential customers in Ohio remained relatively constant during this period. Since 1979, the number of Ohio residential natural gas customers has been increasing annually. However, the weather sensitivity of residential consumption, measured in terms of the change in the monthly volume of residential requirements as measured in MMCF per degree day per month, has generally been declining since the mid-seventies in the service areas of the four major Ohio natural gas utilities (See Table 10). Hence, residential sector demand has been declining. This fact is a reflection of the effectiveness of residential conservation measures implemented in Ohio. These measures, in turn, are a response to increasing natural gas prices. (See Tables 11 and 12).

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[1] See Appendix B for a quantitative analysis of historical natural gas requirements in Ohio.

As a result of reduction in interstate gas supplies during the mid-seventies, base allocations of lower priority industrial and commercial customers were curtailed between 1973-1977. This led to conservation in the commercial and industrial sectors, and to some fuel switching in the industrial sector. A reduced level of statewide economic activity has also contributed to declining trends of demand in these two sectors, as well as a continuing increase in natural gas prices from 1972 onward.

There is no doubt that the major incentive for conservation in all sectors of the economy is the steep increase in energy costs. Between 1972 and 1981, imported oil costs have risen eight-fold, and natural gas prices have risen four-fold (See Tables 11 and 12). These increases have been far ahead of any increases in real per-capita income.

Historical Monthly Sectoral Requirements

The monthly time series behavior of residential, commercial, industrial, and total natural gas requirements in Ohio from January 1970 through August 1983, is displayed in Figures 7 through 10. The seasonal variation in residential and commercial requirements can easily be discerned from these illustrations. Natural gas usage in all sectors peaks during the heating season, and falls off during the cooling season. The contrast between the natural gas consumption levels during the heating and non-heating seasons has increased over the past two years. The dramatic effect of curtailment enforced on the industrial sector during the 1976-77 heating season is shown in Figure 9.

Historical Annual Sectoral Requirements

Figures 11 through 16 present the annual sectoral natural gas consumption patterns observed in Ohio from 1960 to 1982. Figure 17 illustrates the respective shares of residential, commercial, industrial, and the combined electric utility and transportation ("other") sectors in the Ohio total. The historical trend of consumption shows a gradual increase from 1960 to 1972, followed by a gradual decrease from 1972 to date. The downward trend can be explained by numerous factors, including:

1. A ban on new customer hookups from 1972 to 1978 in response to the dwindling supply.
2. Curtailments in industrial requirements from 1973 to 1977.
3. Conservation induced by public and private programs and by the rising cost of natural gas.
4. A weak statewide economic condition reflecting the adverse impacts of worldwide economic shocks of the 1970's on the structure of the economy in the United States and in Ohio.

The economic shocks mentioned in point 4 above include:

a) the breakdown of the prevailing international monetary system in 1971 and the subsequent 100 percent devaluation in U.S. currency by 1973;

b) quadrupling of crude oil price by OPEC in 1973;

c) the winding down and termination of more than a decade of U.S. overseas military engagement in southeast Asia;

d) the doubling of already quadrupled crude oil prices in 1978;

e) three recessions of increasing severity and duration in 1971, 1974-75, and 1980 to (roughly) 1982.

The impact of such severe, permanent, and widespread alterations in the general economic environment has drastically altered the structure of costs, prices, incomes, and production relations worldwide. The initial impacts of the shocks in question on the economy of Ohio have been rather adverse. The continued downward trend in sectoral energy consumption in general, and natural gas consumption in particular, reflects not only conservation considerations alone, but may also reflect a permanent loss in industrial capacity, especially in the manufacturing industries.

Utility Forecasts: Twelve Month Outlook

On the basis of utilities' projected natural gas supplies, and the historically established trends in natural gas requirements, the outlook for the next 12 months indicates no supply shortages under normal or 10 percent colder than normal weather conditions, concurrent with projected price increases and a moderate economic recovery.

Aggregate supply and demand projections of the eight major utilities, as presented in Table 13 and Figure 18, indicate a 0.1 percent annual surplus of natural gas supplies over requirements. All eight utilities project supply to be in excess of requirements during the 1983-84 heating season. Supply and demand projections of the individual utilities, as submitted in their "Monthly Reports of Supply and Demand of Natural Gas," are summarized in Appendix B, Table B-9.

Because natural gas is the primary source of space heating for the residential and commercial sectors, over 60 percent of the natural gas consumed in Ohio is used during the heating season. Table 14 shows the actual aggregate monthly sectoral requirements for the eight major utilities from September 1982 through August 1983, along with the utilities' consolidated projections for the September 1983 through August 1984 period. The forecast shows increases in demand in all sectors. Figure 19 is a graphic representation of the utilities' consolidated sectoral projections for the forecast period. Overall, the forecast total annual gas requirement shows an increase of 7.8 percent relative to the same twelve month period last year.

Actual and forecast aggregate supply of natural gas by source is displayed in Table 15. Delivered product from all pipeline sources is expected to increase 7.9 percent over the previous twelve month period. The majority of this supply, roughly 90 percent, will continue to come from out-of-state sources. Columbia Gas Transmission Corporation by far the largest state supplier, is projected to supply 46.4 percent of natural gas demand.

The Ohio Division of Energy will be monitoring developments in the supplies and requirements of natural gas throughout the rest of the year and will take appropriate action if a critical situation develops. However, Ohio Division of Energy's current conclusion is that prevailing conditions portend no shortages or curtailments of natural gas during the 1983-84 heating season.

Ohio Division of Energy Independent Forecast

Methodology

The independent natural gas demand forecasts prepared by Ohio Division of Energy for the eight major gas utilities serving Ohio are based upon time series analyses of sectoral requirements for each individual month of the year, between January 1970 and August 1983, adjusted for long-term annual trends or severe climatic conditions.

Time series models, with adjustments, yield projections that possess statistical properties that are at least as accurate as alternative short-term forecasting techniques. They also offer the added flexibility of being able to produce updated forecasts every time the most recent actual monthly requirements are reported to Ohio Division of Energy. The utilization of an adjusted time series methodology is designed to provide a double check, thus reducing forecasting error for a more accurate and decisive diagnosis of energy requirements of the state.

Results and Outlook

The results obtained on the basis of the ODOE methodology for the 1983-84 heating season are presented in Tables 16 through 21. The summary results presented in Tables 16 and 17 indicate a potential deficiency of 0.1 percent in the case of a 10 percent colder than normal winter, which could be accounted for in the variation of the forecasting methods. The forecast for sectoral end-user requirements is presented in Table 17. From these projections it is concluded that the use of current supply or storage capacities of Ohio natural gas utilities would be necessary only if a more severe winter occurs.

Any unexpected changes in the short-term behavior of residential and commercial requirements would mainly be associated with variations in the severity of the heating season, and the rate of increase in natural gas prices. Given conservation efforts and increasing supplies of natural gas, dramatic changes in the long-term behavior of residential and commercial natural gas requirements are not anticipated in the near future. Long-term residential and commercial sector requirements are expected to stabilize near 1978 or 1979 levels as the economy fully recovers from the recession. Major climatic deviations, such as a repeat of the winter of 1976, may create temporary increases in residential or commercial demand, but sustained growth of natural gas consumption is not projected. Even if real per-capita incomes increase substantially, gas consumption is expected to remain stable, since higher prices will discourage high levels of demand. The long-term effects of the recent recession, if any, should be discernible in the next one or two years.

Industrial sector demand is expected to continue its decline, primarily since industrial customers are switching to residual fuel oil as an economical energy source. Rapid increases in gas prices, coupled with stabilized oil prices, are bringing oil into the picture as a competitively priced fuel. Many industrial and large commercial firms are developing dual fuel capability (oil and gas) in order to respond to possible unforeseen price fluctuations. However, many small industrial and commercial firms, as well as residential customers, will not have fuel-switching capability. This will no doubt increase conservation efforts as gas prices continue to escalate.

Based upon a 10 percent colder than normal weather scenario, and accelerated economic recovery in the last quarter of 1983, Ohio Division of Energy forecasts an adequate gas supply combined with slightly increasing or stabilizing demand for the upcoming year.

ODOE's independent forecasts for the four major utilities are compared with each company's bi-annual forecast for the period from November 1983 through October 1984 in Appendix B, Tables B-1 through B-4. The Division's forecasts of sectoral end-use gas requirements for Ohio are presented in Appendix B, Tables B-5 through B-8. These have been adjusted for the long-term historical trends observed in sectoral natural gas requirements in the State. Finally, for comparison, Appendix B, Table B-9 displays twelve month forecasts produced monthly by each utility and reported to the Ohio Division of Energy.

Alternative Fuel Use Capability Profile

There have been no natural gas curtailments in Ohio since 1978, and neither Ohio gas utilities nor the gas pipeline companies project any curtailments for the November 1983 through October 1984 period. However, in the event of a projected shortage, it is anticipated that fuel-switching capability of industrial and large commercial users would be accelerated. Detailed emergency plans that describe strategies to respond to fuel supply shortfalls are on file at the Ohio Division of Energy.

Table 8. Total Natural Gas Requirements of All Commercial Utilities in Ohio, September 1982 through August 1983 (MMCF)

	(1) Sales to All End Users	(2) Storage (In)	Total Requirement (1+2)	Percent of Total Ohio Requirement
Cincinnati Gas and Electric Co.	70,460	0	70,460	9.63
Columbia Gas of Ohio	237,878	0	237,878	32.52
Dayton Power and Light Co.	47,726	0	47,726	6.52
East Ohio Gas Co.	263,028	62,864	325,892	44.55
National Gas and Oil Co.	13,495	1,262	14,757	2.02
Ohio Gas Co.	5,734	336	6,070	0.83
River Gas Co.	3,719	0	3,719	0.51
West Ohio Gas Co.	10,724	0	10,724	1.47
Total Eight Major Utilities	652,764	64,462	717,226	98.05
Total Small Utilities	7,901	0	7,901	1.08
Municipal Utilities	6,332	0	6,332	0.87
TOTAL ALL UTILITIES	666,997	64,462	731,459	100.00

Source: ODOD Form SG-2 and SG-4

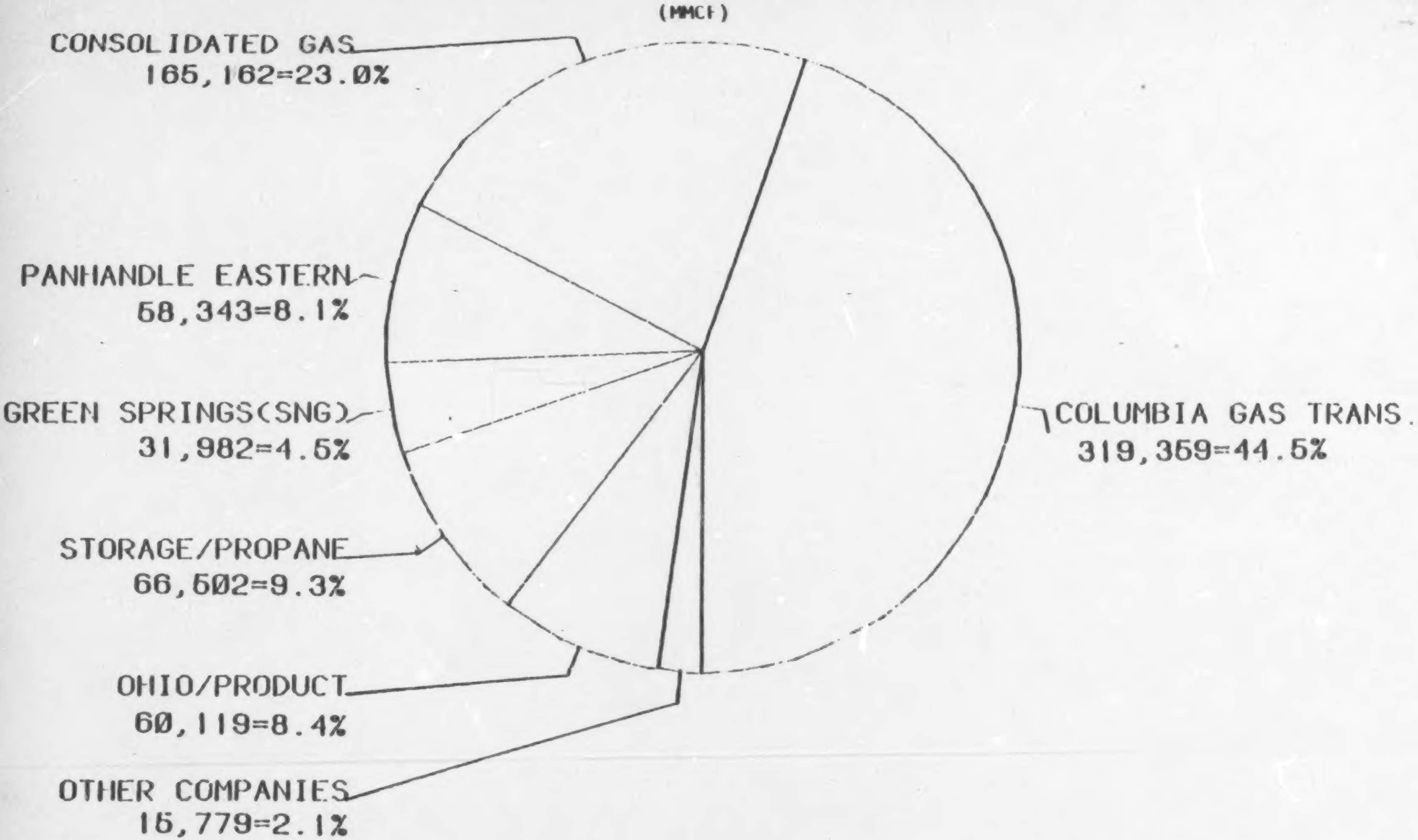
Table 9. Sources of Natural Gas Supplies to the Eight Major Gas Utilities, September 1982 through August 1983
(MMCF)

	Supply	Percent of Total	Rank
Columbia Gas Transmission Corp.	319,359	44.53	1
Consolidated Gas Supply Corp.	165,162	23.03	2
Lawrenceburg Gas	5,605	0.78	8
Michigan/Wisconsin Pipeline Co.	1,461	0.20	9
Panhandle Eastern Pipeline Co.	58,343	8.14	5
Tennessee Gas Pipeline Co.	1,407	0.20	10
Texas Eastern Transmission Corp.	7,249	1.01	7
Texas Gas Transmission Corp.	231	0.03	11
Green Springs (SNG)	31,982	4.46	6
Storage/Propane[1]	66,502	9.27	3
Other	-196	-0.03	
Total SNG and Out-of-State	657,105	91.62	
Ohio Product	60,119	8.38	4
TOTAL	717,224		

Note: [1] Gas in storage represents a source during the period under consideration. Figure is elevated because Cincinnati Gas and Electric maintains propane in storage for peak-shaving.

Source: Ohio Division of Energy Form SG-2

FIG. 8 SOURCE OF NATURAL GAS SUPPLY TO
THE EIGHT MAJOR OHIO GAS UTILITIES (SEPTEMBER [illegible] - AUGUST [illegible])



SOURCE: OHIO DIVISION OF ENERGY

Table 10. Weather Sensitivity of Residential Natural Gas Consumption in Ohio (1970-1982)

MMCF/Per Heating Degree-Day

Year	Cincinnati Gas and Electric	Columbia Gas	Dayton Power and Light	East Ohio Gas
1970	6.43	21.64	5.69	22.95
1971	6.96	24.04	6.04	23.57
1972	6.95	23.81	5.77	24.22
1973	6.78	23.68	5.72	23.04
1974	6.78	23.35	5.58	24.21
1975	6.83	22.73	5.61	24.34
1976	6.34	21.22	5.04	22.52
1977	5.15	18.95	4.79	20.44
1978	5.11	18.00	4.54	19.74
1979	5.10	18.48	4.53	20.68
1980	4.77	17.91	4.28	19.26
1981	4.82	17.45	4.22	18.73
1982	5.43	17.27	4.07	17.71

Source: Ohio State University Gas Model, monthly reports of four Ohio gas utilities and the Ohio Division of Energy.

Table 11. Ohio Natural Gas Prices in Current Dollars, 1970-1981
($ Per MMBtu)

Year	Residential	Commercial	Industrial
1970	0.84	0.73	0.52
1971	0.96	0.81	0.56
1972	1.02	0.86	0.62
1973	1.08	0.94	0.65
1974	1.23	1.07	0.85
1975	1.51	1.35	1.12
1976	1.79	1.63	1.43
1977	2.23	2.07	1.95
1978	2.43	2.24	2.05
1979	2.78	2.57	2.32
1980	3.45	3.23	2.97
1981	3.97	3.71	3.43
1982	4.96	4.65	4.32
1983[a]	5.41	5.04	4.66

Source: American Gas Association, Gas Facts, and the Ohio Division of Energy.

[a] 1983 reported prices are first six month average for U.S. Census Region 2 which includes Ohio, Michigan, Wisconsin and Indiana.

Table 12. Ohio Natural Gas Prices in Constant Dollars, 1970-1981
(Dollars per MMBtu)
(1967 = 100

Year	Residential	Commercial	Industrial
1970	0.72	0.63	0.45
1971	0.78	0.67	0.47
1972	0.81	0.69	0.49
1973	0.81	0.71	0.46
1974	0.83	0.72	0.58
1975	0.94	0.84	0.69
1976	1.05	0.96	0.84
1977	1.23	1.14	1.07
1978	1.24	1.15	1.05
1979	1.28	1.18	1.07
1979	1.28	1.18	1.07
1980	1.40	1.31	1.20
1981	1.42	1.34	1.25
1982[a]	1.69	1.60	1.50
1983[b]	1.80	1.69	1.58

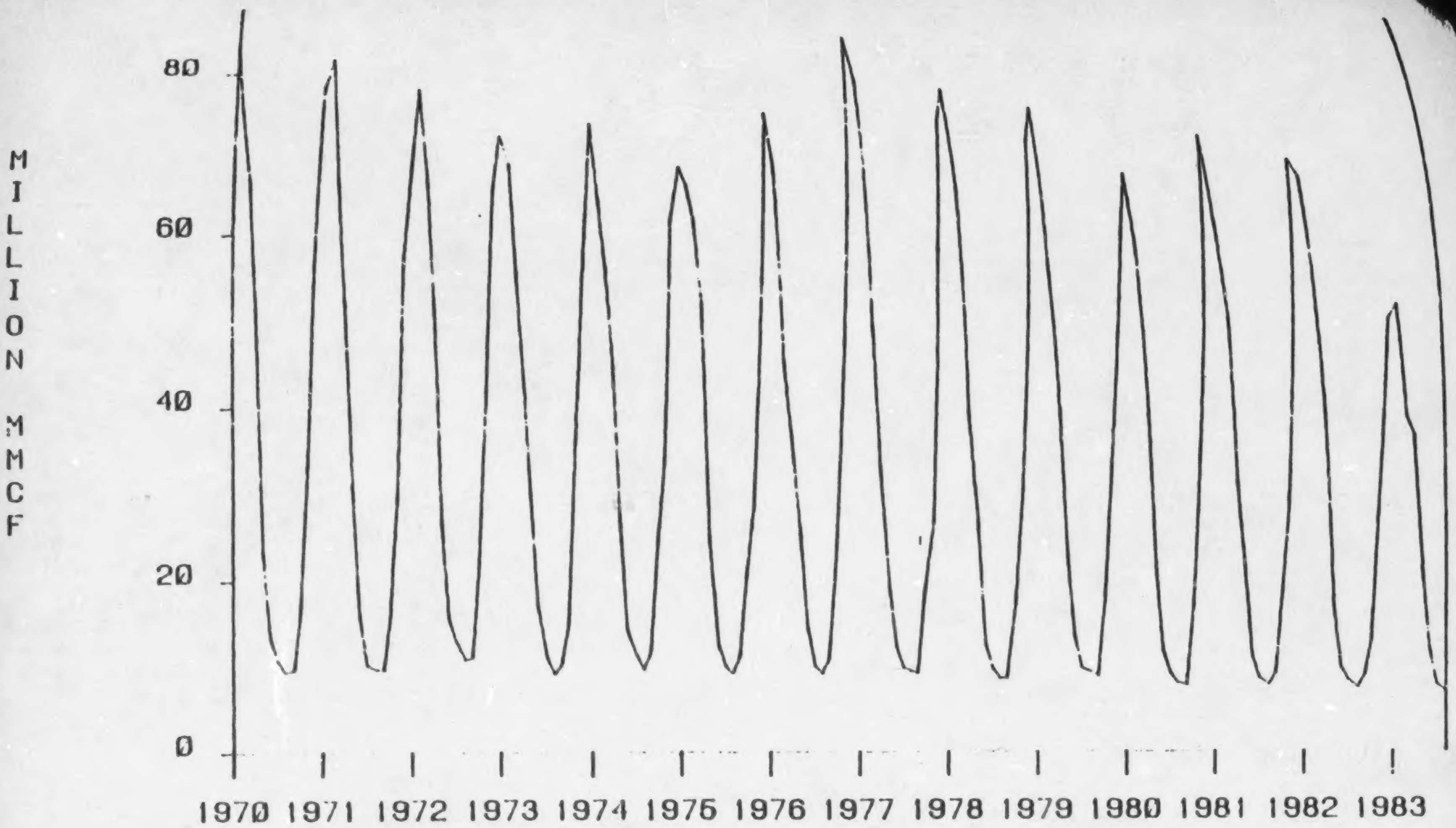
Note: All prices are stated in terms of 1967 dollars.

Source: American Gas Association, Gas Facts, 1981, U.S. Department of Commerce, Survey of Current Business, April 1982.

[a] Both 1982 and 1983 constant dollars are derived by using Consumer Price Indexes provided by the U.S. Department of Commerce.

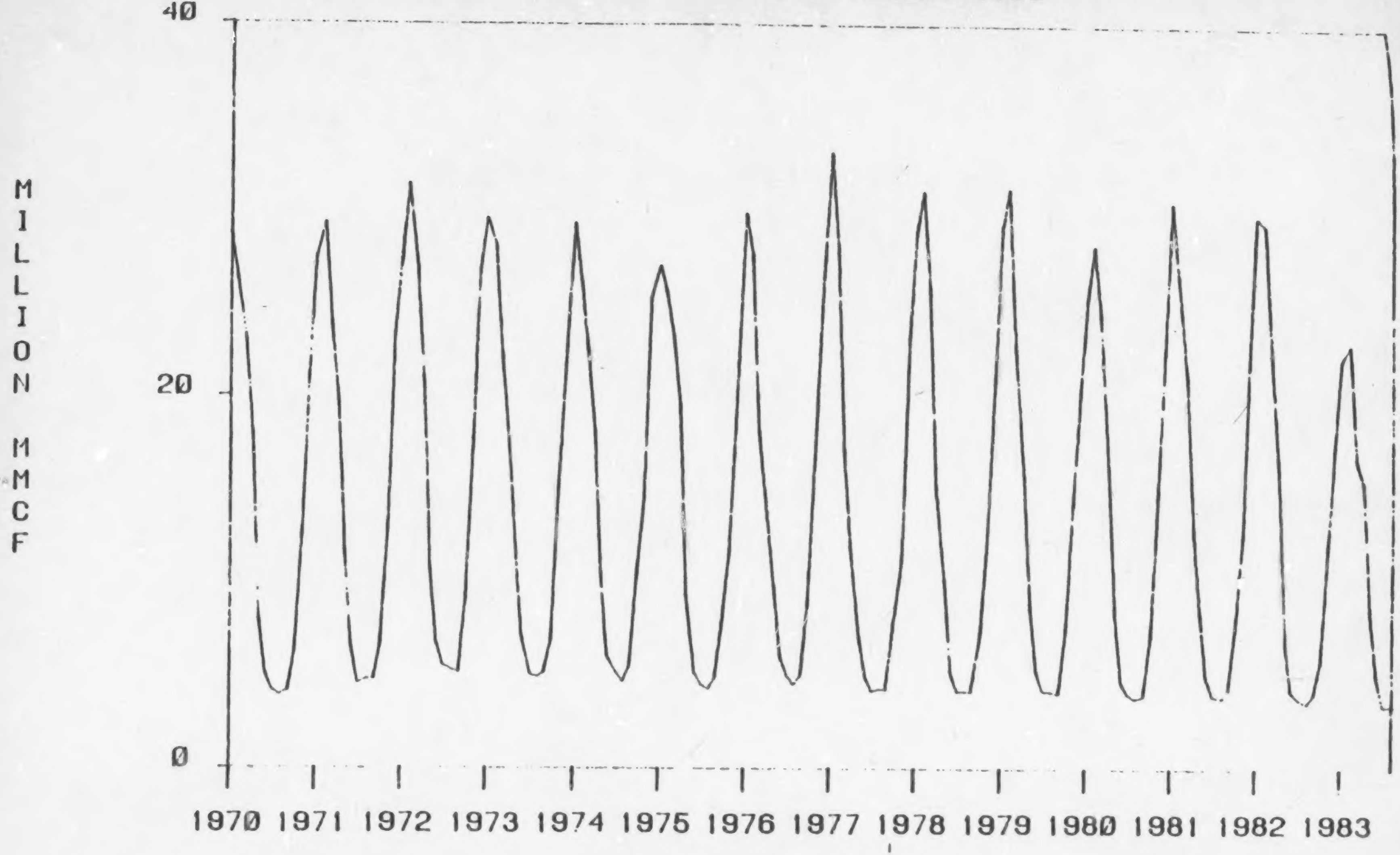
[b] 1983 preliminary data aggregated for U.S. Region 2.

FIG. 7 MONTHLY OHIO RESIDENTIAL NATURAL GAS CONSUMPTION
JANUARY 1970 - AUGUST 1983



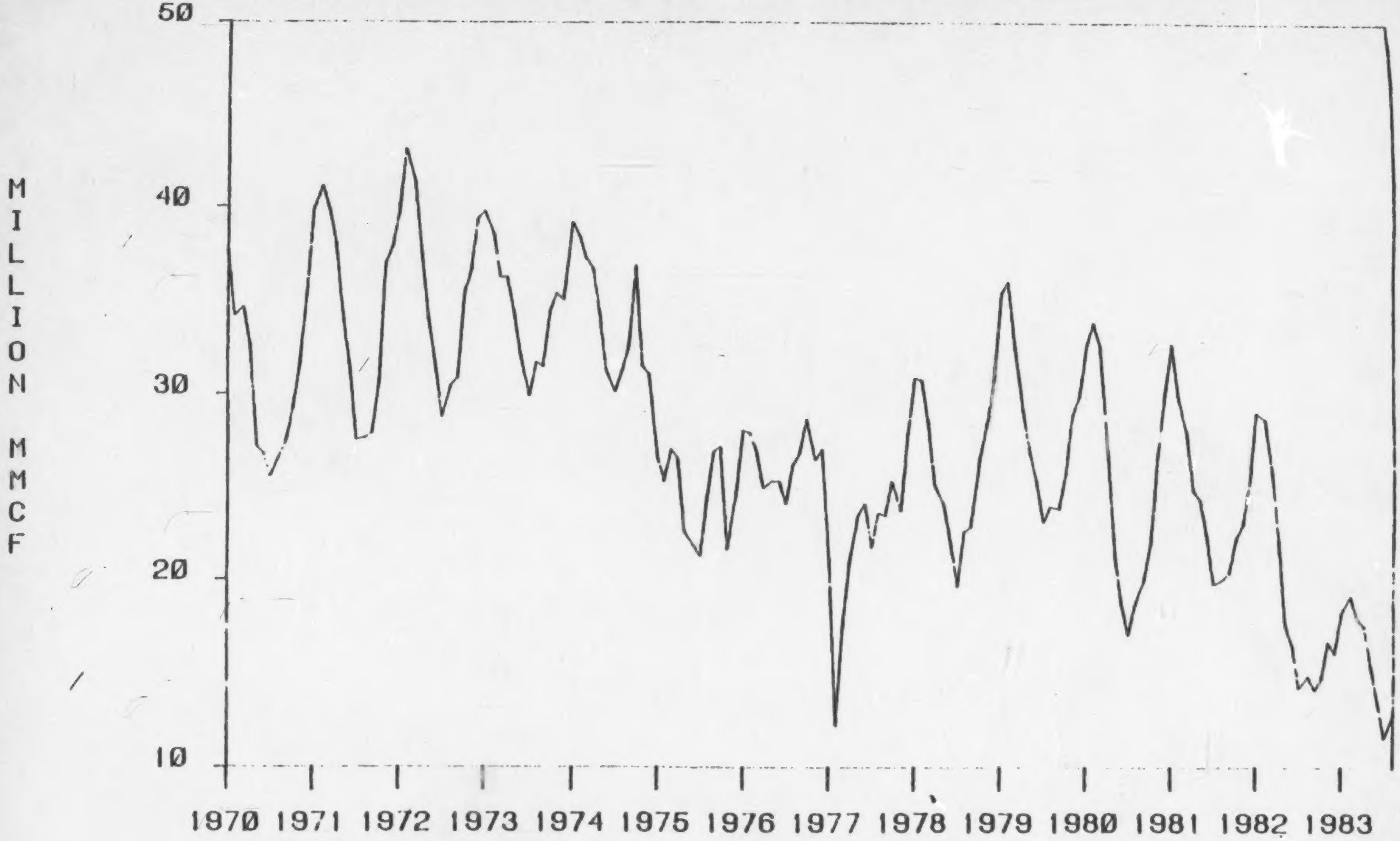
SOURCE: OHIO DIVISION OF ENERGY

FIG. 8. MONTHLY OHIO COMMERCIAL NATURAL GAS CONSUMPTION
JANUARY 1970 - AUGUST 1983



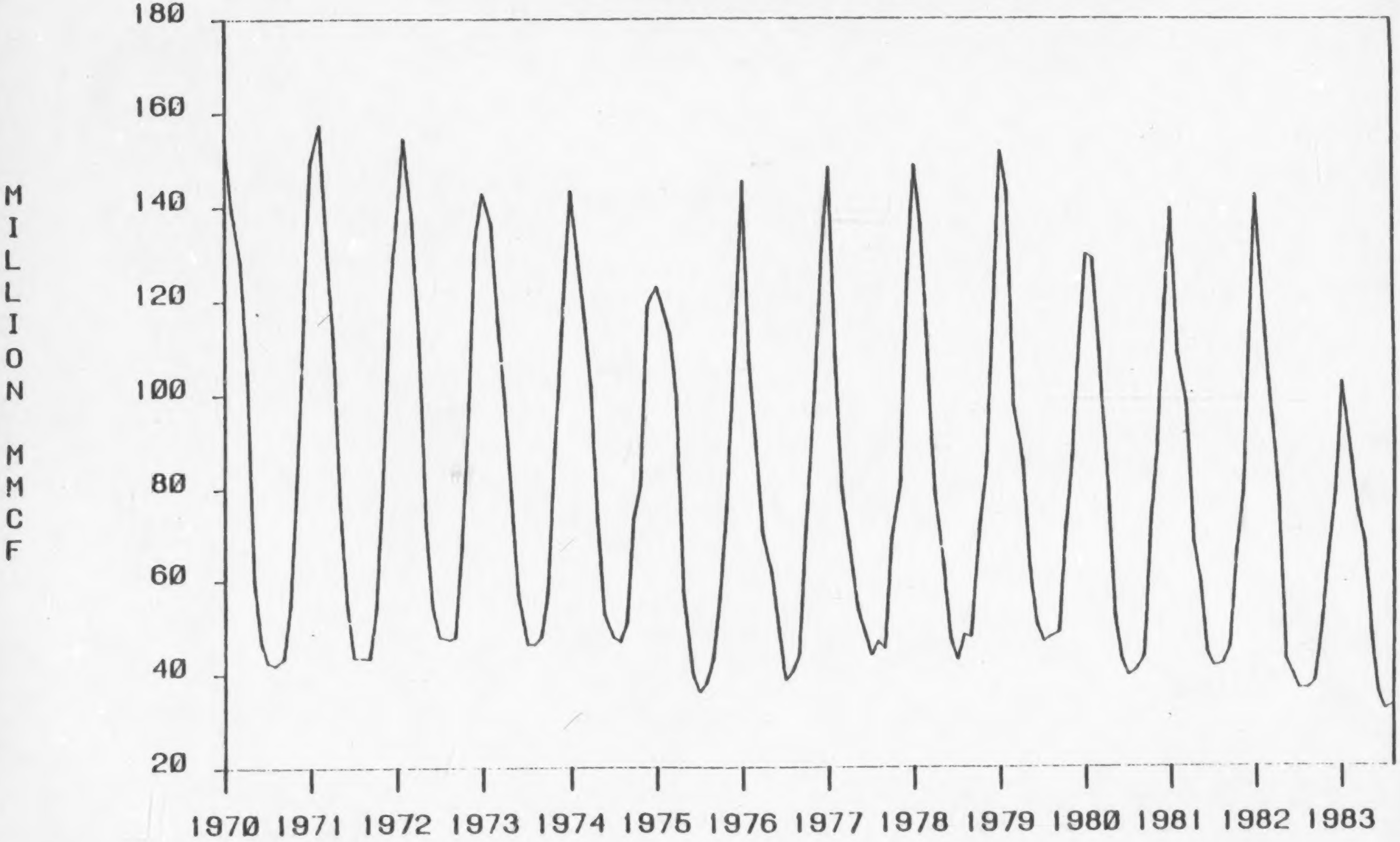
SOURCE: OHIO DIVISION OF ENERGY

FIG. 9. MONTHLY OHIO INDUSTRIAL NATURAL GAS CONSUMPTION
JANUARY 1970 - AUGUST 1983



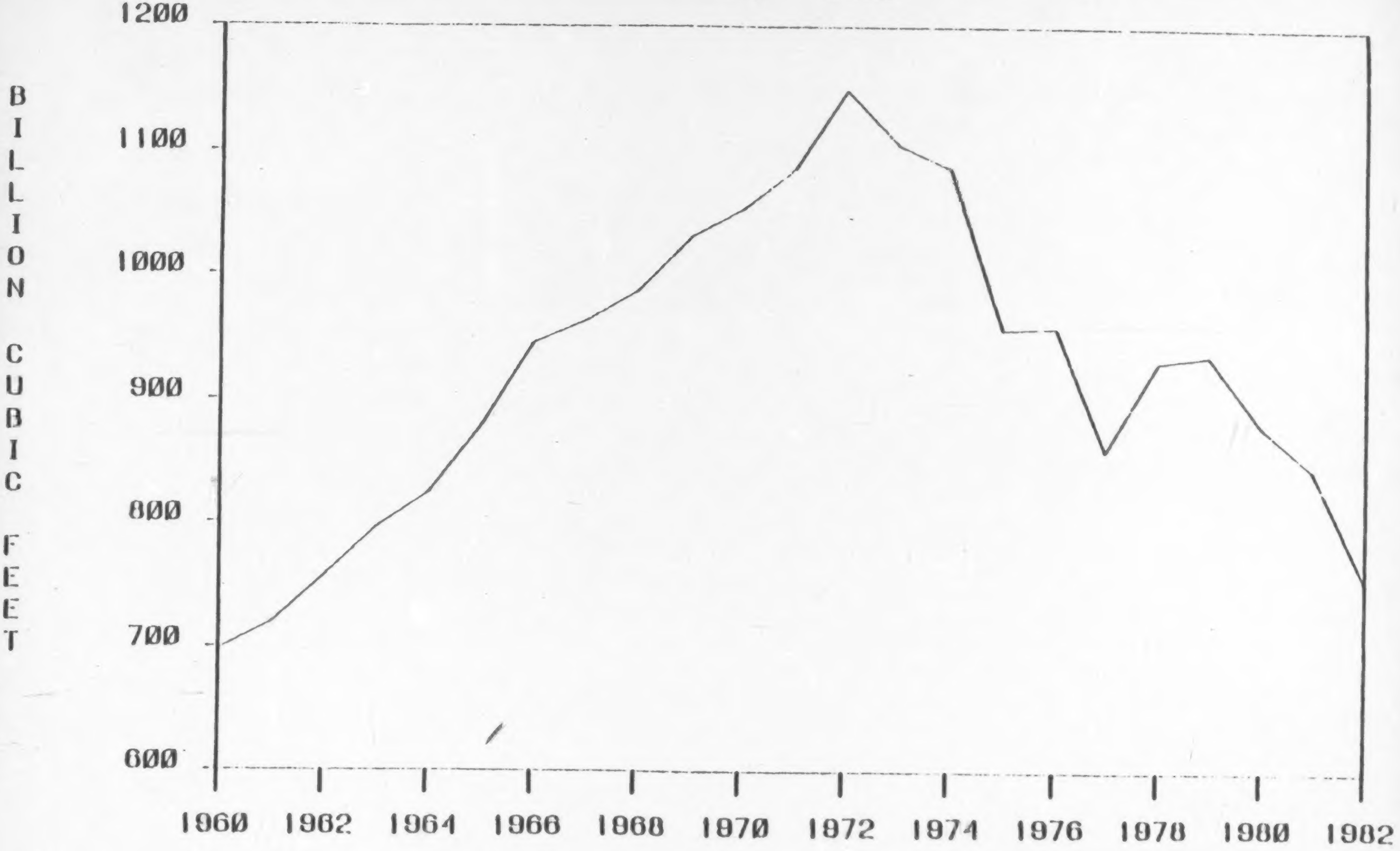
SOURCE: OHIO DIVISION OF ENERGY

FIG. 10 MONTHLY OHIO TOTAL NATURAL GAS CONSUMPTION
JANUARY 1970 - AUGUST 1983



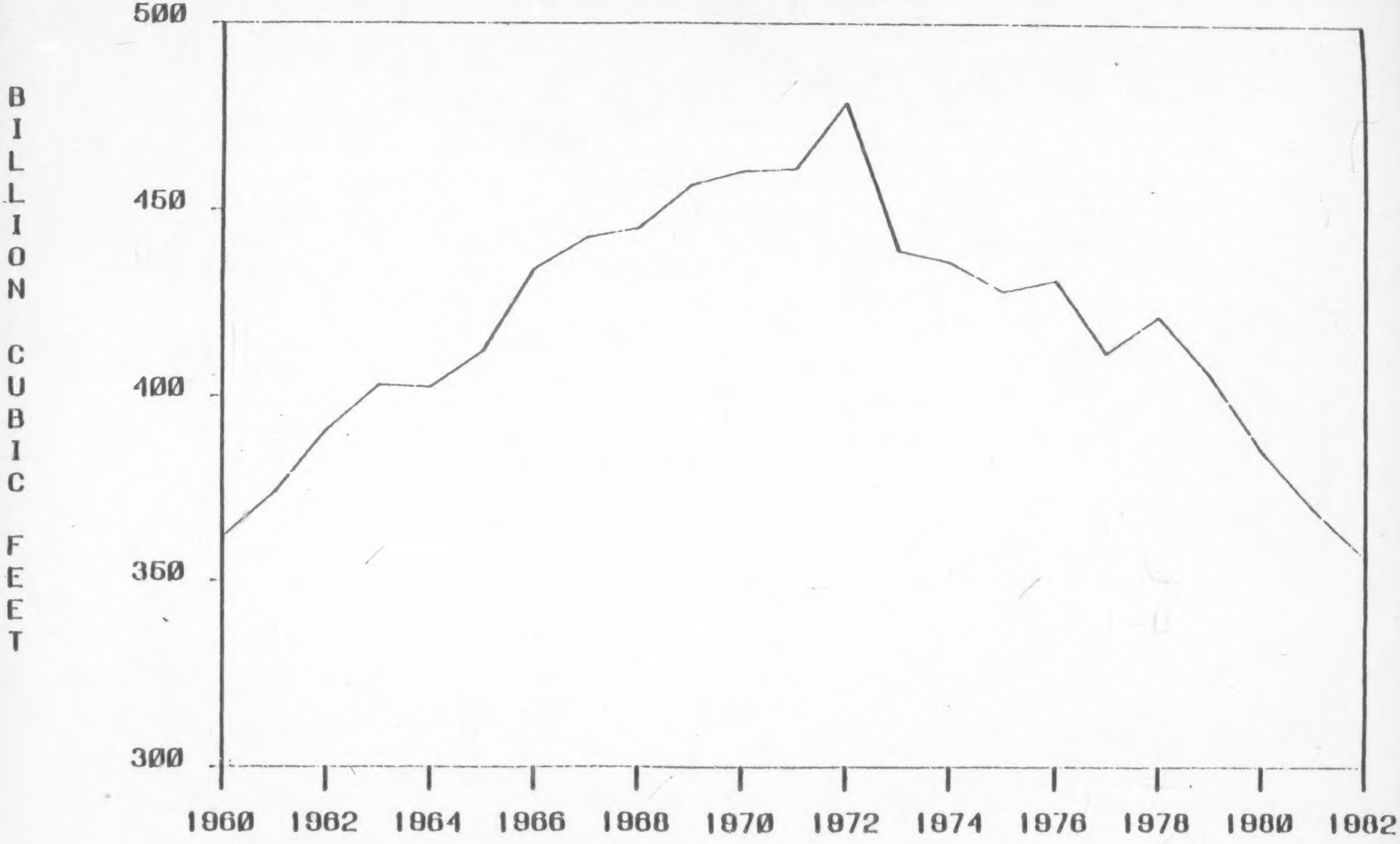
SOURCE: OHIO DIVISION OF ENERGY

FIG. 11. OHIO TOTAL NATURAL GAS CONSUMPTION, 1960 - 1982



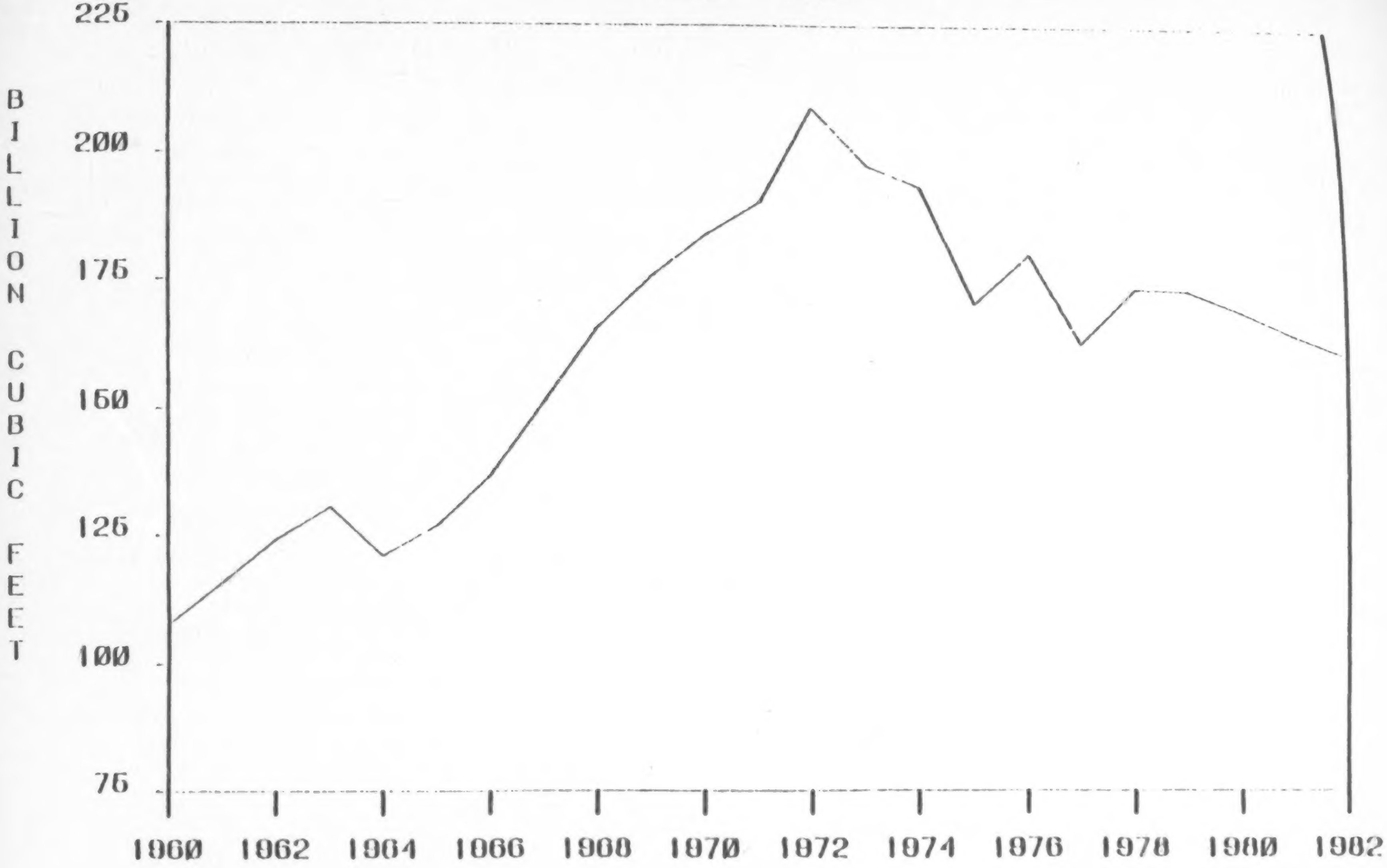
SOURCE: OHIO DIVISION OF ENERGY

FIG. 12. OHIO RESIDENTIAL NATURAL GAS CONSUMPTION, 1960 - 1982



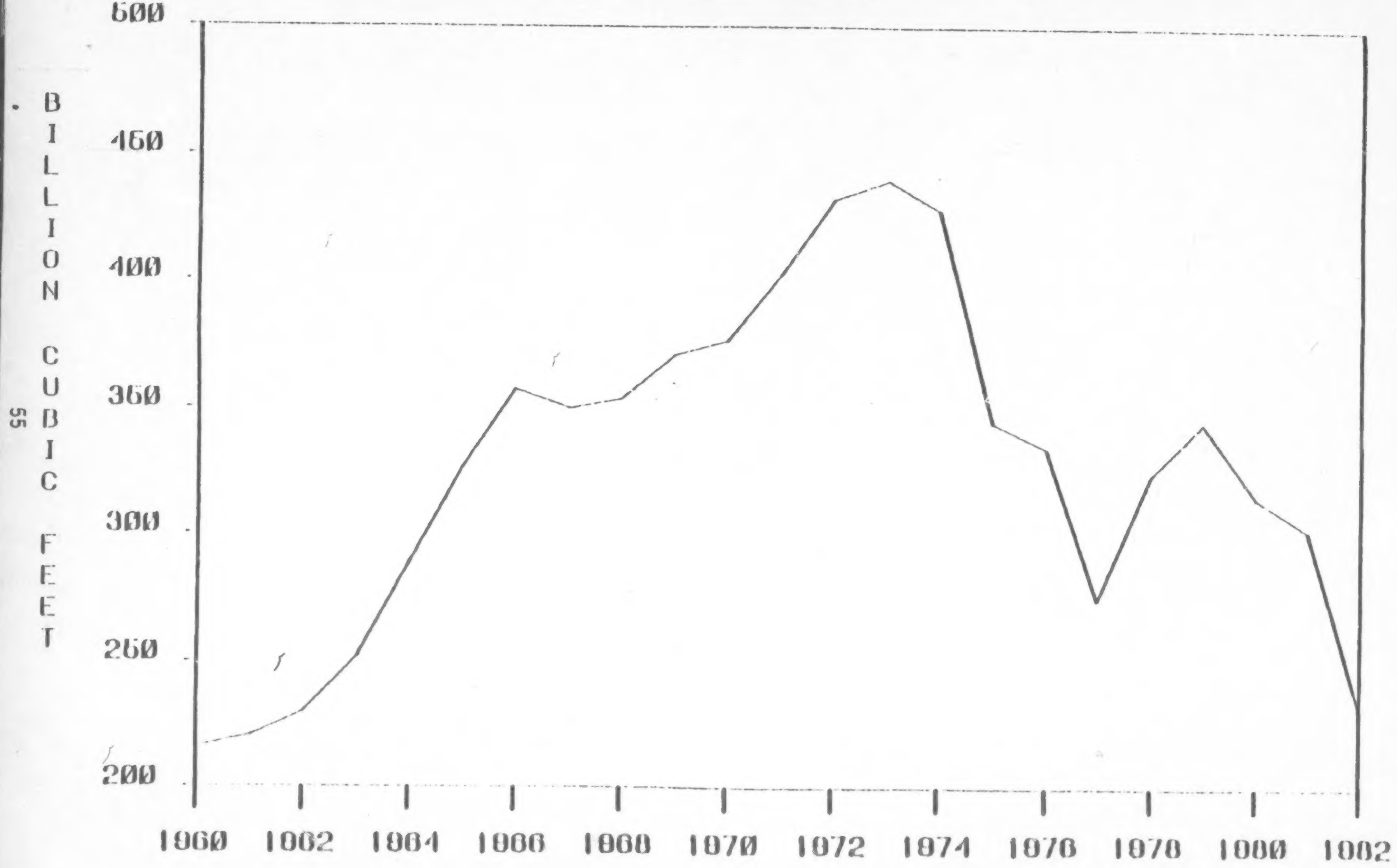
SOURCE: OHIO DIVISION OF ENERGY

FIG. 13. OHIO COMMERCIAL NATURAL GAS CONSUMPTION, 1960 - 1982



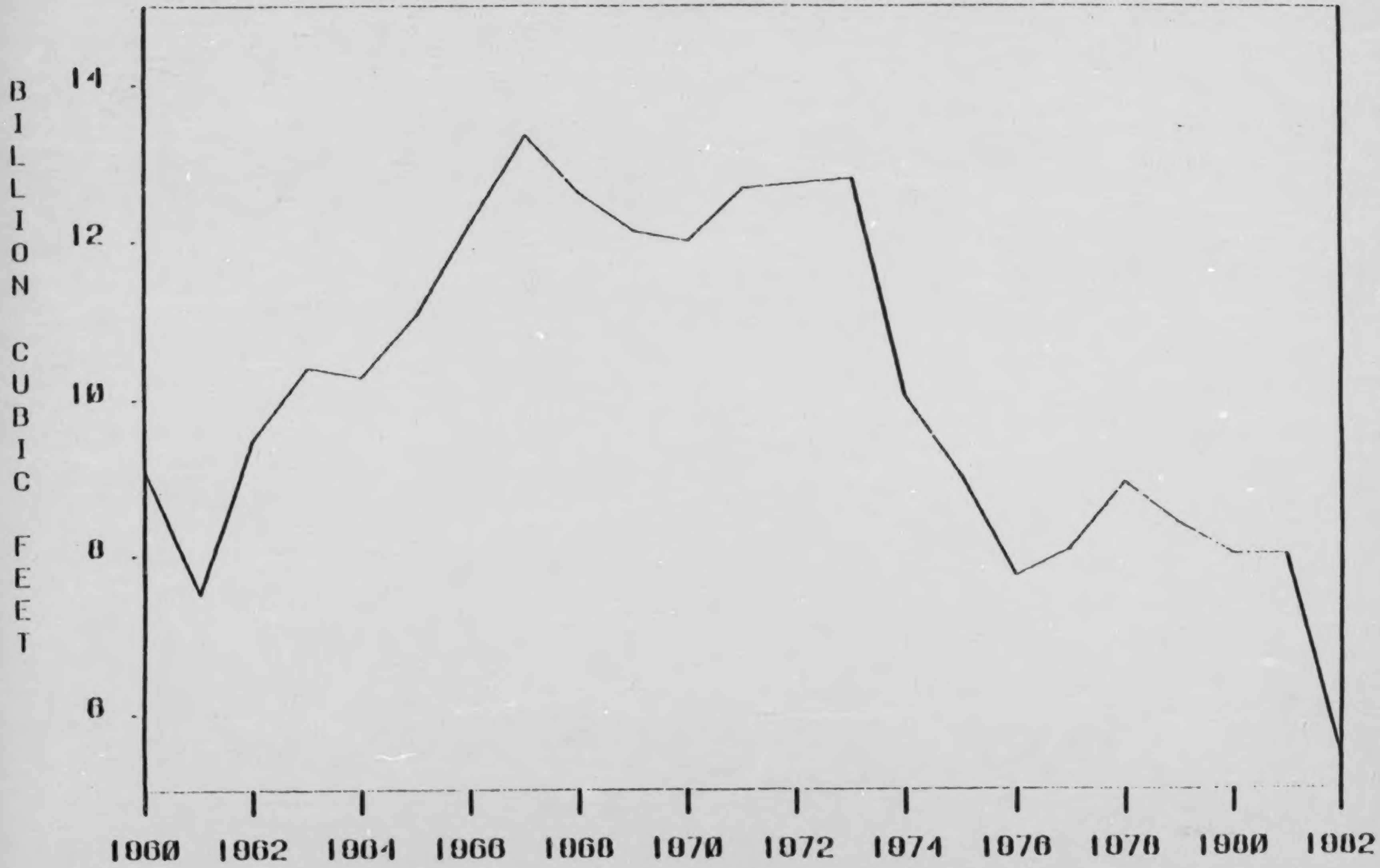
SOURCE: OHIO DIVISION OF ENERGY

FIG. 14. OHIO INDUSTRIAL NATURAL GAS CONSUMPTION
1960 - 1982



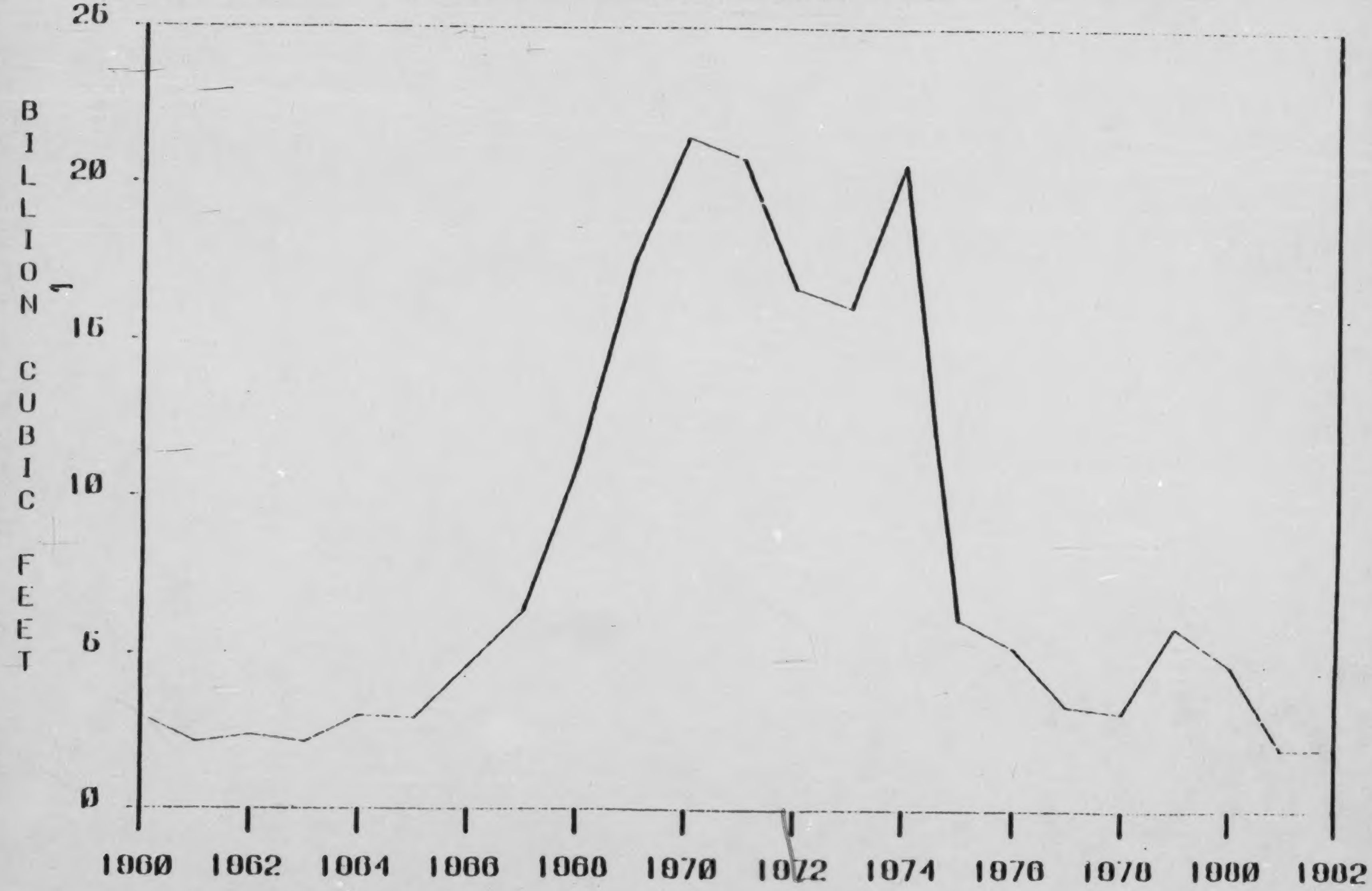
SOURCE: OHIO DIVISION OF ENERGY

FIGURE 15. OHIO TRANSPORTATION NATURAL GAS CONSUMPTION, 1960 - 1982



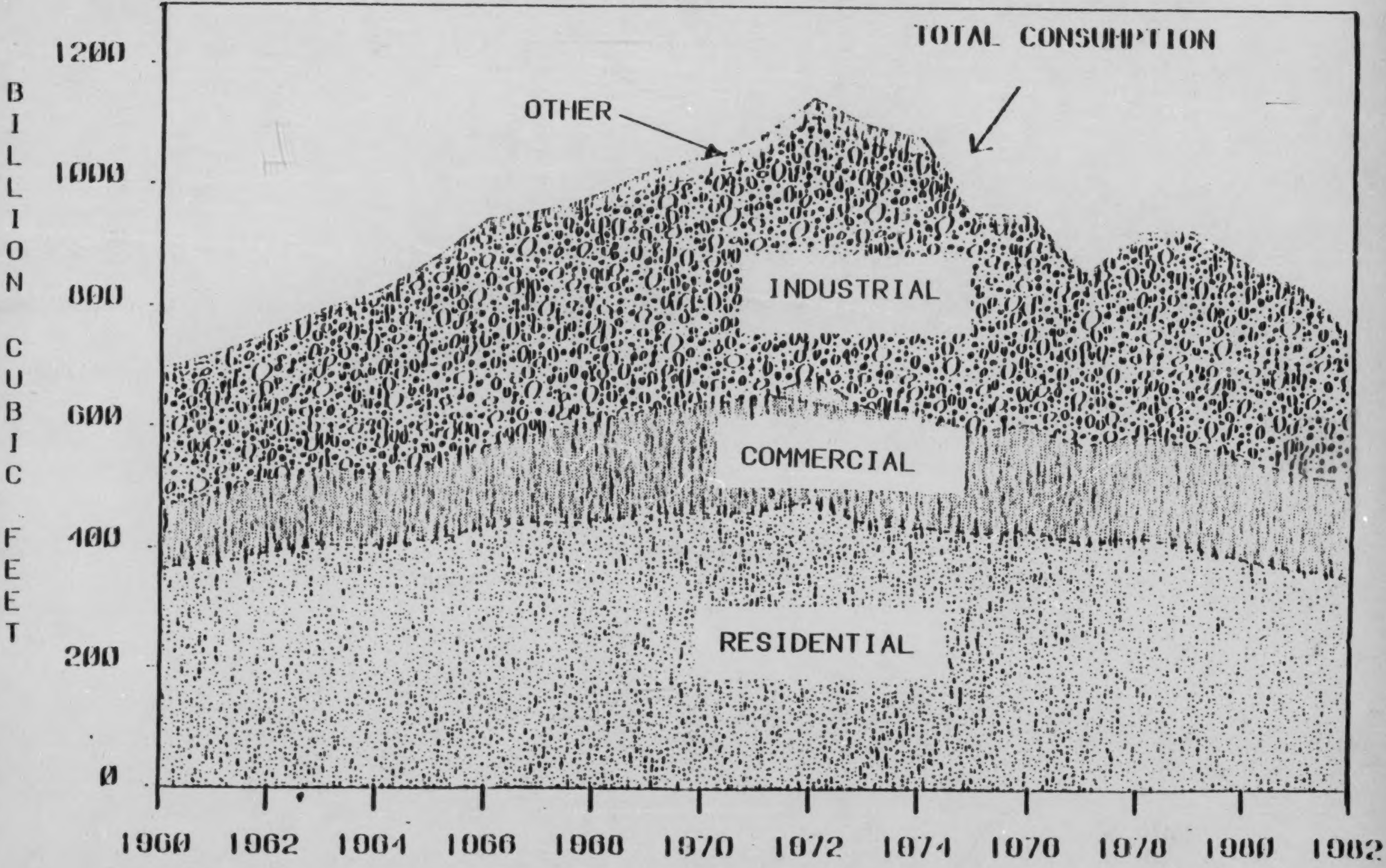
SOURCE: OHIO DIVISION OF ENERGY

FIGURE 18. OHIO ELECTRIC UTILITY NATURAL GAS CONSUMPTION
1960 - 1982



SOURCE: OHIO DIVISION OF ENERGY

FIGURE 17. OHIO NATURAL GAS CONSUMPTION BY SECTOR
1960 – 1982



NOTE: "OTHER" INCLUDES TRANSPORTATION AND ELECTRIC UTILITY CONSUMPTION.

SOURCE: OHIO DIVISION OF ENERGY

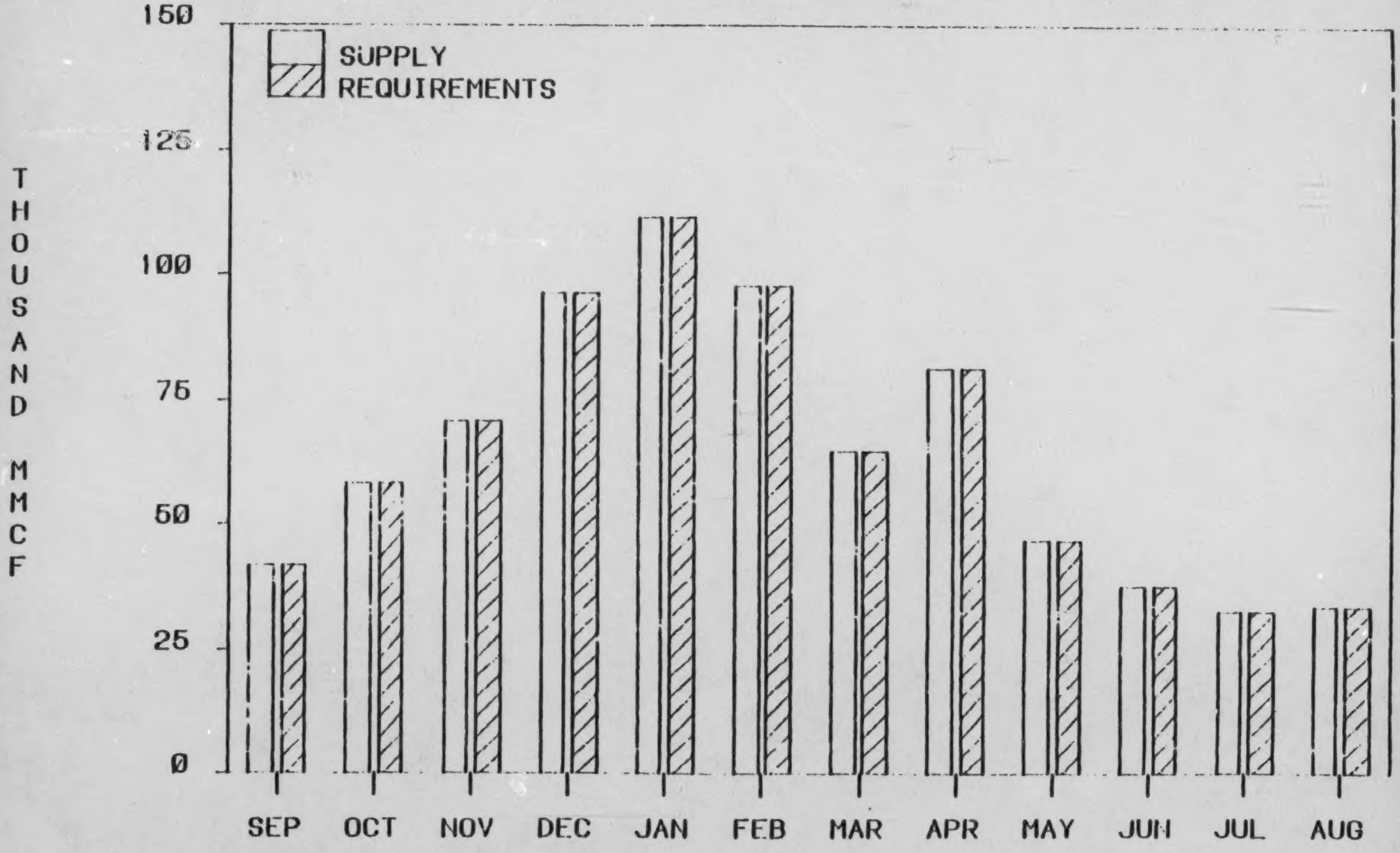
Table 13. Projected Aggregate Supply and Requirements for Natural Gas for Eight Major Utilities September 1983 - August 1984 (MMCF)

Month/ Year	9/83	10/83	11/83	12/83	1/84	2/84	3/84	4/84	5/84	6/84	7/84	8/84	Summer Totals	Winter Totals	Annual Totals
Supply	42,013	58,435	70,817	96,551	111,447	97,763	81,259	64,635	46,971	37,538	32,521	33,817	315,930	457,837	773,767
Demand	41,896	58,203	70,517	96,264	111,432	97,763	81,259	64,635	46,971	37,538	32,521	33,817	315,581	456,235	772,016
Deficiency	-117	-232	-300	-287	-15	0	0	0	0	0	0	0	-349	-602	-951
Percent Deficiency	-0.3	-0.4	-0.4	-0.3	-0.0	0	0	0	0	0	0	0	-0.1	-0.1	-0.1

Note: A positive deficiency indicates a shortage; a negative deficiency indicates a surplus.

Source: ODOE Form SG-1 of eight major gas utilities and the Ohio Division of Energy

FIGURE 10. PROJECTED SUPPLY AND REQUIREMENTS OF NATURAL GAS EIGHT MAJOR COMPANIES (SEPTEMBER 1983 - AUGUST 1984)



SOURCE: OHIO DIVISION OF ENERGY

Table 14. Comparison Between One Year of Actual and Forecast Demand for Eight Major Ohio Gas Utilities by Sector

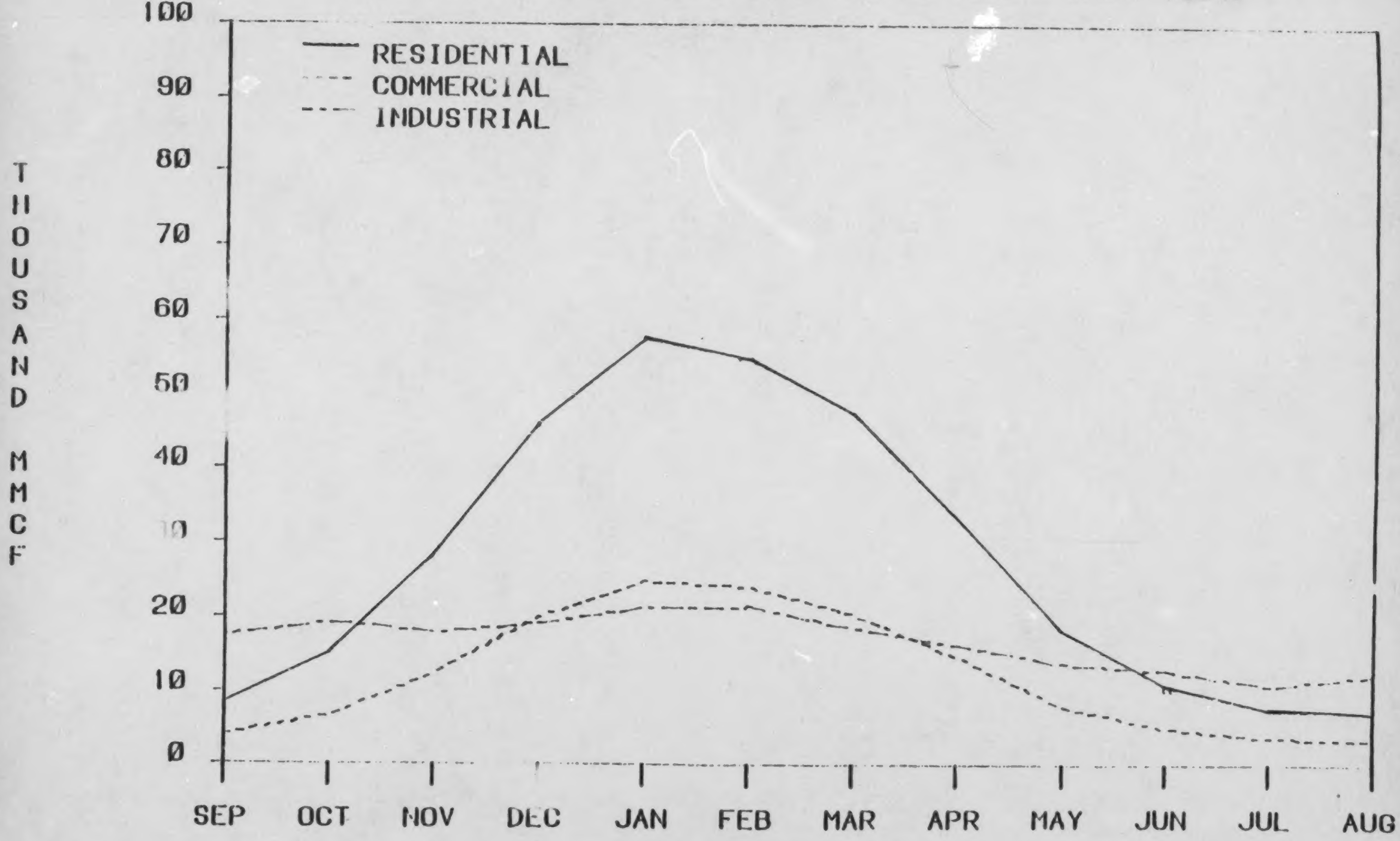
MONTH/YEAR	DEGREE DAYS	RESIDENTIAL REQUIREMENT	COMMERCIAL REQUIREMENT	INDUSTRIAL REQUIREMENT	OTHER REQUIREMENT	STORAGE (IN)	TOTAL REQUIREMENT	DEFICIENCY
9/83 9/82	87 87 0.0%	8538 8807 -3.1%	4122 4113 0.2%	17457 14167 23.2%	3049 1974 54.5%	8730 9150 -4.6%	41896 38211 9.6%	-117 2 -5950.0%
10/83 10/82	334 334 0.0%	15132 13095 15.6%	6653 5789 14.9%	19241 14855 29.5%	10144 9471 7.1%	7033 7980 -11.9%	58203 51190 13.7%	-232 0 999.9%
11/83 11/82	690 686 0.6%	28429 26841 5.9%	12344 11872 4.0%	17781 16757 6.1%	11963 9900 20.8%	0 314 -100.0%	70517 65684 7.4%	-300 0 999.9%
12/83 12/82	1052 1028 2.3%	46285 38216 21.1%	19989 16959 17.9%	19050 16152 17.9%	10940 6898 58.6%	0 682 -100.0%	96264 78907 22.0%	-287 0 999.9%
1/84 1/83	1141 1124 1.5%	57543 50065 14.9%	24816 21976 12.9%	21249 18409 15.4%	6498 11868 -45.2%	1326 5 26420.0%	111432 102323 8.9%	-15 0 999.9%
2/84 2/83	980 977 0.3%	54766 51699 5.9%	24034 22747 5.7%	21421 19208 11.5%	-3784 -7752 51.2%	1326 276 380.4%	97763 86178 13.4%	0 0 0.0%
3/84 3/83	823 814 1.1%	47534 38557 23.3%	20534 16520 24.3%	18612 18008 3.4%	-5421 1324 -509.4%	0 152 -100.0%	81259 74561 9.0%	0 0 0.0%
4/84 4/83	735 455 61.5%	33472 36593 -8.5%	14746 15458 -4.6%	16291 17588 -7.4%	-7837 -8232 4.8%	7963 7225 10.2%	64635 68632 -5.8%	0 0 0.0%
5/84 5/83	202 196 3.1%	18224 20915 -12.9%	8086 8661 -6.6%	13845 15449 -10.4%	-3701 -6187 40.2%	10517 10136 3.8%	46971 48974 -4.1%	0 0 0.0%
6/84 6/83	30 29 3.4%	10800 12054 -10.4%	5053 5094 -0.8%	12896 13553 -4.8%	-1326 -4014 67.0%	10115 9806 3.2%	37530 36493 2.9%	0 0 0.0%
7/84 7/83	5 5 0.0%	7533 7789 -3.3%	3654 3508 4.2%	10847 11678 -7.1%	654 -89 834.8%	9833 9526 3.2%	32521 32412 0.3%	0 0 0.0%
8/84 8/83	11 11 0.0%	7144 7005 2.0%	3472 3481 -0.3%	12378 12812 -3.4%	1851 1153 60.5%	8972 9210 -2.6%	33817 33661 0.5%	0 0 0.0%
SUMMER TOTAL	1404 1117 25.7%	100843 106258 -5.1%	45786 46104 -0.7%	102955 100102 2.9%	2834 -5924 147.8%	63163 63033 0.2%	315581 309573 1.9%	-349 2 *******%
WINTER TOTAL	4686 4629 1.2%	234557 205378 14.2%	101717 90074 12.9%	98113 88534 10.8%	20196 22238 -9.2%	2652 1429 85.6%	457235 407653 12.2%	-602 0 999.9%
YEAR TOTAL	6090 5746 6.0%	335400 311636 7.6%	147503 136178 8.3%	201060 188636 6.6%	23030 16314 41.2%	65815 64462 2.1%	772816 717226 7.8%	-951 2 *******%

NOTE: (1) WINTER TOTAL IS A SUM OF THE VALUES IN NOVEMBER, DECEMBER, JANUARY, FEBRUARY, AND MARCH

(2) 999.9% REPRESENTS AN INFINITE PERCENTAGE CHANGE RESULTING FROM AN INCREASE FROM A ZERO VALUE TO SOME NON ZERO VALUE AND THUS A DIVISION BY ZERO.

(3) A POSITIVE DEFICIENCY INDICATES SHORTAGE, A NEGATIVE DEFICIENCY INDICATES SURPLUS.

FIGURE 10. PROJECTED GAS REQUIREMENTS FOR OHIO BY SECTOR FOR EIGHT MAJOR COMPANIES (SEPT. 1983 - AUG. 1984)



SOURCE: OHIO DIVISION OF ENERGY

Table 15. Comparison Between One Year of Actual and Forecast Supply for Eight Major Ohio Gas Utilities by Source
(MMCF)

MO/YR	COLUMBIA GAS	CONSOLID-ATED GAS	LAWREN-CEBURG	MICH. WISC.	PANHANDLE EAST	TENN. GAS	TEXAS EASTERN	TEXAS GAS	EMERG GAS	OHIO PRODUCT	SNG	STORAGE/ PROPANE	OTHER	TOTAL SUPPLIES
9/83	15168	13618	255	29	5769	150	615	10	0	4717	1567	165	-50	42013
9/82	13224	10976	249	58	5275	111	593	7	0	4867	1596	1272	-19	38209
	14.7%	24.1%	2.4%	-50.0%	9.4%	35.1%	3.7%	42.9%	0.0%	-3.1%	-1.8%	-87.0%	-163.2%	10.0%
10/83	24621	17531	263	71	6164	150	635	15	0	4732	2153	170	-70	58435
10/82	21067	14178	252	110	5395	135	599	13	0	4694	2189	564	-6	51190
	16.9%	20.7%	4.4%	-35.5%	14.3%	11.1%	6.0%	15.4%	0.0%	0.8%	-1.6%	-69.9%	-1066.7%	14.2%
11/83	35557	10767	213	84	4655	150	615	26	0	4795	2478	11567	-90	70817
11/82	33091	9314	227	127	5366	126	582	24	0	5164	3238	8174	251	65684
	7.5%	15.6%	-6.2%	-33.9%	-13.3%	19.0%	5.7%	8.3%	0.0%	-7.1%	-23.5%	41.5%	-135.9%	7.8%
12/83	50358	17112	165	145	4962	150	635	41	0	4801	3249	15003	-70	96551
12/82	39953	9834	187	157	5788	118	631	30	0	5300	4254	12986	-331	78907
	26.0%	74.0%	-11.8%	-7.6%	-14.3%	27.1%	0.6%	36.7%	0.0%	-9.4%	-23.6%	15.5%	78.9%	22.4%
1/84	59474	19045	132	89	5307	150	635	51	0	4780	3442	18402	-60	111447
1/83	52684	15205	244	204	5011	125	672	43	0	5059	4543	18609	-76	102323
	12.9%	25.3%	-45.9%	-56.4%	5.9%	20.0%	-5.5%	18.6%	0.0%	-5.5%	-24.2%	-1.1%	21.1%	8.9%
2/84	50289	22911	107	162	4660	145	560	45	0	4752	3181	10888	63	97763
2/83	43857	15571	241	161	4424	135	558	35	0	4559	4279	12438	-80	86178
	[illegible]	47.1%	-55.6%	0.6%	5.3%	7.4%	0.4%	28.6%	0.0%	4.2%	-25.7%	-12.5%	178.7%	13.4%
3/84	40987	16910	500	181	4834	158	630	36	0	5197	2818	8950	50	81259
3/83	35276	13883	271	165	4718	111	571	29	0	5139	3897	10498	3	74561
	16.2%	21.8%	84.5%	9.7%	2.5%	42.3%	10.3%	24.1%	0.0%	1.1%	-27.7%	-14.7%	1566.7%	9.0%
4/84	31560	21432	540	168	4531	110	610	22	0	5169	0	495	-10	64635
4/83	31003	23528	458	161	4535	109	570	20	0	4873	2394	910	80	68632
	1.8%	-8.9%	17.9%	4.3%	-0.1%	0.9%	7.0%	10.0%	0.0%	6.1%	-100.0%	-45.6%	-112.5%	-5.8%
5/84	[illegible]	17010	573	54	4516	110	630	13	0	5178	0	230	60	46971
5/83	[illegible]	17562	657	118	4523	119	605	11	0	4871	1745	421	176	48974
	[illegible]	-3.1%	-12.8%	-54.2%	-0.2%	-7.6%	4.1%	18.2%	0.0%	6.3%	-100.0%	-45.4%	-65.9%	-4.1%
6/84	13931	11896	1059	48	4467	110	610	9	0	5239	0	165	4	37538
6/83	11940	12066	643	87	4409	104	605	7	0	5238	1376	321	-297	36493
	16.7%	[illegible]	64.7%	-44.8%	1.3%	5.8%	0.8%	28.6%	0.0%	0.0%	-100.0%	-48.6%	101.3%	2.9%
7/84	9567	[illegible]	1107	37	4619	110	630	8	0	5354	0	170	73	32521
7/83	[illegible]	10257	1003	52	4529	106	625	6	0	4937	1225	164	-8	32412
	[illegible]	-3.1%	10.4%	-28.8%	2.0%	3.8%	0.8%	33.3%	0.0%	8.4%	-100.0%	3.7%	1012.5%	0.3%
8/84	8836	10791	2039	38	4439	110	620	6	0	5756	0	165	112	33817
8/83	9582	10822	1153	61	4371	108	638	6	0	5418	1246	145	111	33641
	-7.8%	-0.3%	76.8%	-37.7%	1.6%	1.9%	-2.8%	0.0%	0.0%	6.2%	-100.0%	13.8%	0.9%	0.5%
SUMMER TOTAL														
	122288	104219	5836	445	34505	850	4350	83	0	36145	3720	1560	119	315930
	114498	101355	4415	647	33036	792	4235	70	0	34898	11771	3797	37	309571
	6.8%	2.8%	[illegible]	[illegible]	4.4%	7.3%	2.7%	18.6%	0.0%	3.6%	-68.4%	-58.9%	221.6%	2.1%
WINTER TOTAL														
	236665	[illegible]	1117	661	24418	753	3075	199	0	24325	15168	64810	-107	457837
	204861	63807	1170	814	25307	615	3014	161	0	25221	20211	62705	-233	407653
	15.5%	35.9%	-4.5%	-18.8%	-3.5%	22.4%	2.0%	23.6%	0.0%	-3.6%	-25.0%	3.4%	54.1%	12.3%
YEAR TOTAL														
	358953	190964	6953	1106	58923	1603	7425	282	0	60470	18888	66370	12	773767
	319359	165162	5605	1461	58343	1407	7249	231	0	60119	31982	66502	-196	717224
	12.4%	15.6%	24.0%	-24.3%	1.0%	13.9%	2.4%	22.1%	0.0%	0.6%	-40.9%	-0.2%	106.1%	7.9%

NOTE: (1) WINTER TOTAL IS A SUM OF THE VALUES IN NOVEMBER, DECEMBER, JANUARY, FEBRUARY, AND MARCH.

(2) 999.9% REPRESENTS AN INDEFINITE PERCENTAGE CHANGE RESULTING FROM AN INCREASE FROM A ZERO VALUE TO A NON ZERO VALUE AND THUS A DIVISION BY ZERO.

Table 16. Independent Forecasts of Gas Supply and Demand for the Eight Major Ohio Gas Utilities
November 1983 - March 1984
(MMCF)

	Normal Weather			10% Colder Than Normal Weather		
	Supply	Demand	Surplus (Deficiency)[1]	Supply	Demand	Surplus (Deficiency)[1]
Cincinnati Gas & Electric	49,982	45,820	4,162	53,819	49,580	4,239
Columbia Gas	156,457	154,730	1,727	166,419	166,620	(201)
Dayton Power & Light	36,518	35,960	558	39,241	38,580	661
East Ohio Gas	180,680	188,120	(7,440)	191,661	196,870	(5,209)
National Gas	6,548	6,548	-0-	6,584	6,584	-0-
Ohio Gas	4,276	4,276	-0-	4,590	4,590	-0-
River Gas	2,634	2,634	-0-	2,775	2,775	-0-
West Ohio Gas	7,327	7,327	-0-	7,825	7,825	-0-
Total	444,422	445,415	(993)	472,914	473,424	(510)

Note: [1] Numbers within parentheses indicate deficiency. Columbia Gas of Ohio and East Ohio Gas estimate that there is over 145,853 MMCF in storage to meet any deficiencies in Ohio. East Ohio Gas Company indicated that their useable storage capacity of 143,307 MMCF represents 43% of Consolidated's useable storage capacity.

Source: June 1983 ODOE Form SG-2 of reporting utilities, and the Ohio Deivision of Energy.

Table 17. Independent Forecast of Annual Natural Gas End Use Requirements Calendar Year 1984 (Thousands of MMCF)

	Actual 1982	Lower 95% Confidence Limit	Forecast 1984	Upper 95% Confidence Limit	Forecast % Change
Residential	356.51	299	310	321	-13.05
Commercial	159.23	134	141	148	-11.45
Industrial	231.14	177	205**	233	-11.31
Other*	7.41	3	7	11	- 5.53
Total	754.29	583	663	713	-12.10

Source: Ohio Division of Energy.

*Other includes transportation and electric utilities sectors.

** Industrial forecast is based on the assumption that average unemployment will be 9%.

Table 18. Independent Forecasts of Gas Supply and Demand for Cincinnati Gas and Electric Company
November 1983 - March 1984
(MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]
November 1983	7,690	648	69,001	790	8,259	713	7,460	799
December 1983	11,298	967	9,900	1,398	12,148	1,064	10,730	1,418
January 1984	12,034	1,119	11,890	144	13,015	1,231	12,850	165
February 1984	10,533	921	9,480	1,053	11,339	1,013	10,270	1,069
March 1984	8,427	719	7,650	777	9,058	791	8,270	788
Total[1]	49,982		45,820	4,162	53,819		49,580	4,239

Notes: [1] Totals may not add due to independent rounding.

[2] HDD - Heating Degree-Days.

[3] Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: Cincinnati Gas & Electric's June 1983 ODOE Form SG-2, and the Ohio Division of Energy.

Table 19. Independent Forecasts of Gas Supply and Demand for Columbia Gas of Ohio November 1983 - March 1984 (MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]
November 1983	23,932	570	24,460	(528)	25,022	627	25,900	(878)
December 1983	34,093	951	33,040	1,053	36,040	1,046	35,440	600
January 1984	40,188	1,173	40,020	168	42,733	1,290	42,970	(237)
February 1984	31,580	1,102	32,090	(510)	34,028	1,212	34,870	(842)
March 1984	26,664	918	25,120	1,544	28,596	1,010	27,440	1,156
Total[1]	156,457		154,730	1,727	166,419		166,620	(201)

Notes: [1] Totals may not add due to independent rounding.

[2] HDD - Heating Degree-Days.

[3] Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: Columbia Gas of Ohio's June 1983 ODOE Form SG-2, and the Ohio Division of Energy.

Table 20. Independent Forecasts of Gas Supply and Demand for Dayton Power & Light Company
November 1983 - March 1984
(MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]
November 1983	5,407	487	5,130	277	5,711	536	5,410	301
December 1983	7,388	896	7,400	(12)	7,915	986	7,910	5
January 1984	8,418	1,161	9,130	(712)	9,090	1,277	9,790	(700)
February 1984	8,679	1,152	8,630	49	9,345	1,267	9,290	55
March 1984	6,626	891	5,670	956	7,180	980	6,180	1,000
Total[1]	36,518		35,960	558	39,241		38,580	661

Notes: [1] Totals may not add due to independent rounding.

[2] HDD - Heating Degree-Days.

[3] Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: Dayton Power & Light Company's June 1983 ODOE Form Sg-2, and the Ohio Division of Energy.

Table 21. Independent Forecasts of Gas Supply and Demand for East Ohio Gas Company
November 1983 - March 1984

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]
November 1983	27,660	565	30,360	(2,700)	29,208	621	31,360	(2,152)
December 1983	37,401	962	40,160	(2,759)	39,765	1,058	41,870	(2,105)
January 1984	43,476	1,204	46,850	(3,374)	46,242	1,324	48,990	(2,748)
February 1984	39,282	1,168	38,560	722	41,664	1,285	40,640	1,024
March 1984	32,861	1,015	32,190	671	34,782	1,117	34,010	772
Total[1]	180,680		188,120	(7,440)	191,661		196,870	(5,209)

Notes: [1] Totals may not add due to independent rounding.

[2] HDD - Heating Degree-Days.

[3] Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: East Ohio Gas Company's November 1982 ODOE Form SG-2, and the Ohio Division of Energy.

APPENDIX A: ELECTRICITY

Table A-1. Allegheny Power System: Forecast of Electric Energy Demand (1000 MWH)

	Actual Demand (1982-1983)	Utility Forecast (1983-1984)	Forecast % Change (Utility Forecast vs. Actual)	ODOE Forecast (1983-1984)	Forecast % Change (ODOE Forecast vs. Actual)
November	2,394	2,592	8.3	2,623	9.6
December	2,569	2,886	12.3	2,876	12.0
January	2,792	3,213	15.1	3.099	11.0
February	2,525	2,755	9.1	2,770	9.7
March	2,690	2,783	3.5	2,863	6.4
April	2,453	2,482	1.2	2,570	4.8
May	2,363	2,532	7.2	2,513	6.3
June	2,429	2,514	3.5	2,503	3.0
July	2,592	2,609	0.7	2,628	1.4
August	2,726	2,692	-1.2	2,694	1.2
September	2,471	2,510	1.6	2,512	1.7
October		2,665		2,645	

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-2. American Electric Power: Forecast of Electric Energy Demand (1000 MWH)

	Actual Demand (1982-1983)	Utility Forecast (1983-1984)	Forecast % Change (Utility Forecast vs. Actual)	ODOE Forecast (1983-1984)	Forecast % Change (ODOE Forecast vs. Actual)
November	6,146	6,589	11.6	6,656	8.3
December	6,537	7,315	11.9	7,250	10.9
January	7,230	8,096	12.0	7,947	9.9
February	6,409	7,367	14.9	7,079	10.5
March	6,771	7,120	5.2	7,347	8.5
April	6,289	6,235	-0.1	6,744	7.2
May	6,004	6,104	1.7	6,445	7.3
June	6,320	6,198	-1.9	6,635	5.0
July	7,053	6,618	-6.2	7,220	2.4
August	7,376	6,796	-7.9	7,199	2.4
September	6,398	6,226	-2.7	6,403	0.1
October		6,482		6,491	

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-3. Cincinnati Gas and Electric: Forecast of Electric Energy Demand (1000 MWH)

	Actual Demand (1982-1983)	Utility Forecast (1983-1984)	Forecast % Change (Utility Forecast vs. Actual)	ODOE Forecast (1983-1984)	Forecast % Change (ODOE Forecast vs. Actual)
November	1,189	1,193	0.3	1,327	11.6
December	1,261	1,333	5.7	1,480	[illegible]
January	1,376	1,417	3.0	1,567	13.9
February	1,211	1,269	4.8	1,391	14.9
March	1,261	1,293	2.5	1,416	12.3
April	1,172	1,115	-4.9	1,289	10.0
May	1,147	1,209	5.4	1,315	14.6
June	1,330	1,344	1.1	1,425	7.1
July	1,616	1,451	-10.2	1,667	3.2
August	1,667	1,475	-11.5	1,650	-1.0
September	1,325	1,236		1,393	5.1
October		1,184		1,340	

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-4. Cleveland Electric Illuminating Company: Forecast of Electric Energy Demand (1000 MWH)

	Actual Demand (1982-1983)	Utility Forecast (1983-1984)	Forecast % Change (Utility Forecast vs. Actual)	ODOE Forecast (1983-1984)	Forecast % Change (ODOE Forecast vs. Actual)
November	1,361	1,443	6.0	1,592	17.0
December	1,410	1,562	10.8	1,675	18.8
January	1,535	1,663	8.3	1,790	16.6
February	1,413	1,536	8.7	1,645	16.4
March	1,532	1,583	3.3	1.711	11.7
April	1,406	1,429	1.6	1,567	11.5
May	1,414	1,502	6.2	1,536	8.6
June	1,533	1,535	0.1	1,659	8.2
July	1,682	1,602	-4.8	1,760	4.6
August	1,797	1,626	-9.5	1,762	1.9
September	1,587	1,475	-7.1	1,606	1.2
October		1,541		1,627	

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-5. Dayton Power and Light: Forecast of Electric Energy Demand (1000 MWH)

	Actual Demand (1982-1983)	Utility Forecast (1983-1984)	Forecast % Change (Utility Forecast vs. Actual)	ODOE Forecast (1983-1984)	Forecast % Change (ODOE Forecast vs. Actual)
November	834	912	9.4	940	12.7
December	887	1,009	13.8	1,016	14.5
January	986	1,102	11.8	1,126	14.2
February	859	991	15.4	999	16.3
March	893	963	7.8	1,010	13.1
April	826	836	1.2	914	10.6
May	796	825	3.6	883	10.9
June	880	875	-0.6	934	6.1
July	1,023	947	-7.4	1,062	3.8
August	1,056	949	-10.1	1,054	-0.2
September	872	854	-2.1	911	4.5
October		894		941	

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-6. Ohio Edison Company: Forecast of Electric Energy Demand (1000 MWH)

	Actual Demand (1982-1983)	Utility Forecast (1983-1984)	Forecast % Change (Utility Forecast vs. Actual)	ODOE Forecast (1983-1984)	Forecast % Change (ODOE Forecast vs. Actual)
November	1,780	1,953	9.7	1,999	12.3
December	1,812	2,065	14.0	2,112	16.6
January	1,992	2,236	12.2	2,260	13.5
February	1,823	2,028	11.2	2,048	12.3
March	1,977	2,042	3.3	2,147	8.6
April	1,837	1,835	-0.1	1,955	6.4
May	1,809	1,850	2.3	1,946	7.6
June	1.932	1,883	-2.5	1,996	3.3
July	2,101	2,056	-2.1	2,136	1.7
August	2,191	2,075	-5.3	2,156	1.6
September	1,941	1,913	-1.4	1,986	2.3
October		1,988		2,052	

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-7. Ohio Valley Electric Corporation: Forecast of Electric Energy Demand (1000 MWH)

	Actual Demand (1982-1983)	Utility Forecast (1983-1984)	Forecast % Change (Utility Forecast vs. Actual)
November	1,259	1,356	7.7
December	1,322	1,409	6.6
January	1,436	1,440	0.3
February	1,173	1,309	9.5
March	1,257	1,371	9.1
April	1,159	1,373	18.7
May	1,090	1,436	31.7
June	1,170	1,336	14.2
July	1,162	1,461	25.7
August	1,299	1,461	12.5
September	1,127	1,322	17.3
October		1,308	

Note: Figures reflect total net generation.

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-8. Toledo Edison Company: Forecast of Electric Energy Demand (1000 MWH)

	Actual Demand (1982-1983)	Utility Forecast (1983-1984)	Forecast % Change (Utility Forecast vs. Actual)	ODOE Forecast (1983-1984)	Forecast % Change (ODOE Forecast vs. Actual)
November	575	644	12.0	643	11.8
December	601	666	10.8	681	13.3
January	654	680	4.0	741	13.3
February	581	643	10.7	664	14.3
March	615	690	12.2	688	11.9
April	582	635	9.1	622	6.9
May	572	619	8.2	623	8.9
June	611	627	2.6	658	4.4
July	676	658	-2.7	690	2.1
August	709	667	-5.9	699	-1.4
September	625	627	0.3	636	1.8
October	NA	627	NA	658	NA

Source: Form EIA-119M and the Ohio Division of Energy.
Note: NA = Not Available

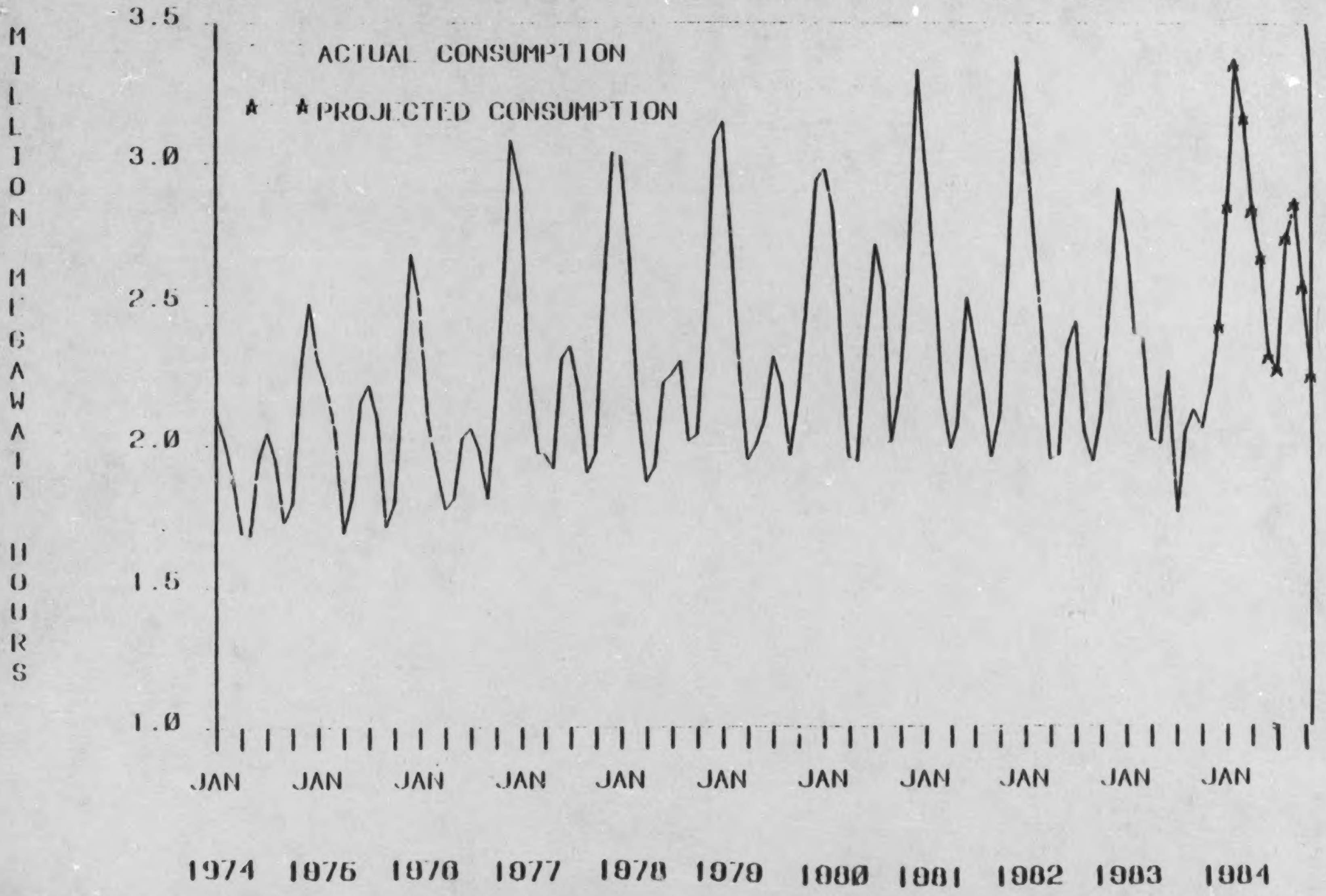
Table A-9. Independent Forecast of Ohio Electricity Demand
Residential Sector

(1000 MWH)

	Lower 95% Confidence Limit	ODOE Forecast (1983-1984)	Upper 95% Confidence Limit	Actual (1982-1983)	Forecast Percentage Change
November	2,081	2,420	2,759	2,114	14.5
December	2,474	2,846	3,218	2,527	12.6
January	2,955	3,344	3,733	2,910	14.9
February	2,750	3,155	3,560	2,726	15.7
March	2,411	2,831	3,251	2,391	18.4
April	2,223	2,658	3,092	2,378	11.8
May	1,859	2,308	2,756	2,017	14.4
June	1,800	2,262	2,725	2,024	11.7
July	2,250	2,726	3,202	2,603	4.7
August	2,362	2,850	3,339	2,818	1.1
September	2,054	2,556	3,057	2,604	-1.8
October	1,692	2,242	2,792		

Note: The forecast is based upon monthly summary statistics of the Ohio Electric Utilities Institute for eight major investor-owned electric utilities (excluding OVEC).

FIGURE A-1.6. MONTHLY OHIO RESIDENTIAL ELECTRICITY CONSUMPTION
ACTUAL AND PROJECTED, JANUARY 1974 - OCTOBER 1984



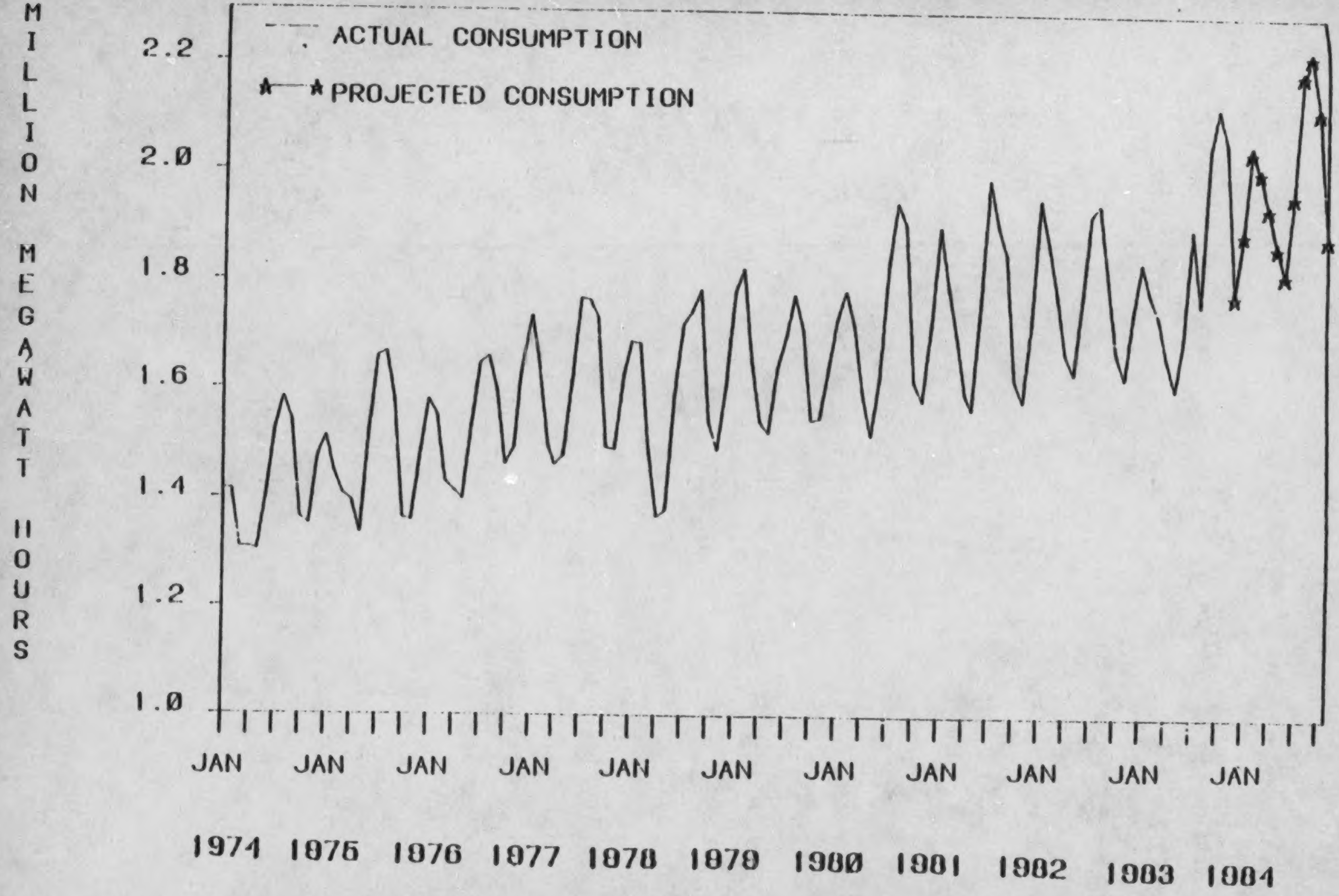
SOURCE: OHIO ELECTRIC UTILITY INSTITUTE AND THE OHIO DIVISION OF ENERGY, (EXCLUDING OVEC)

Table A-10. Independent Forecast of Ohio Electricity Demand
Commercial Sector
(1000 MWH)

	Lower 95% Confidence Limit	ODOE Forecast (1983-1984)	Upper 95% Confidence Limit	Actual (1982-1983)	Forecast Percentage Change
November	1,641	1,778	1,914	1,625	9.4
December	1,742	1,892	2,043	1,744	8.5
January	1,888	2,044	2,201	1,839	11.1
February	1,845	2,006	2,168	1,779	12.8
March	1,771	1.938	2,105	1,740	11.4
April	1,697	1,869	2,041	1,661	12.5
May	1,640	1,817	1,994	1,604	13.3
June	1,780	1,962	2,144	1,759	11.5
July	1,998	2,185	2,372	2,047	6.7
August	2,029	2,221	2,412	2,125	4.5
September	1,921	2,117	2,313	2,060	2.8
October	1,672	1,883	2,095		

Note: The forecast is based upon monthly summary statistics of the Ohio Electric Utilities Institute for eight major investor-owned electric utilities (excluding OVEC).

ACTUAL AND PROJECTED (JANUARY 1974 -- OCTOBER 1984)



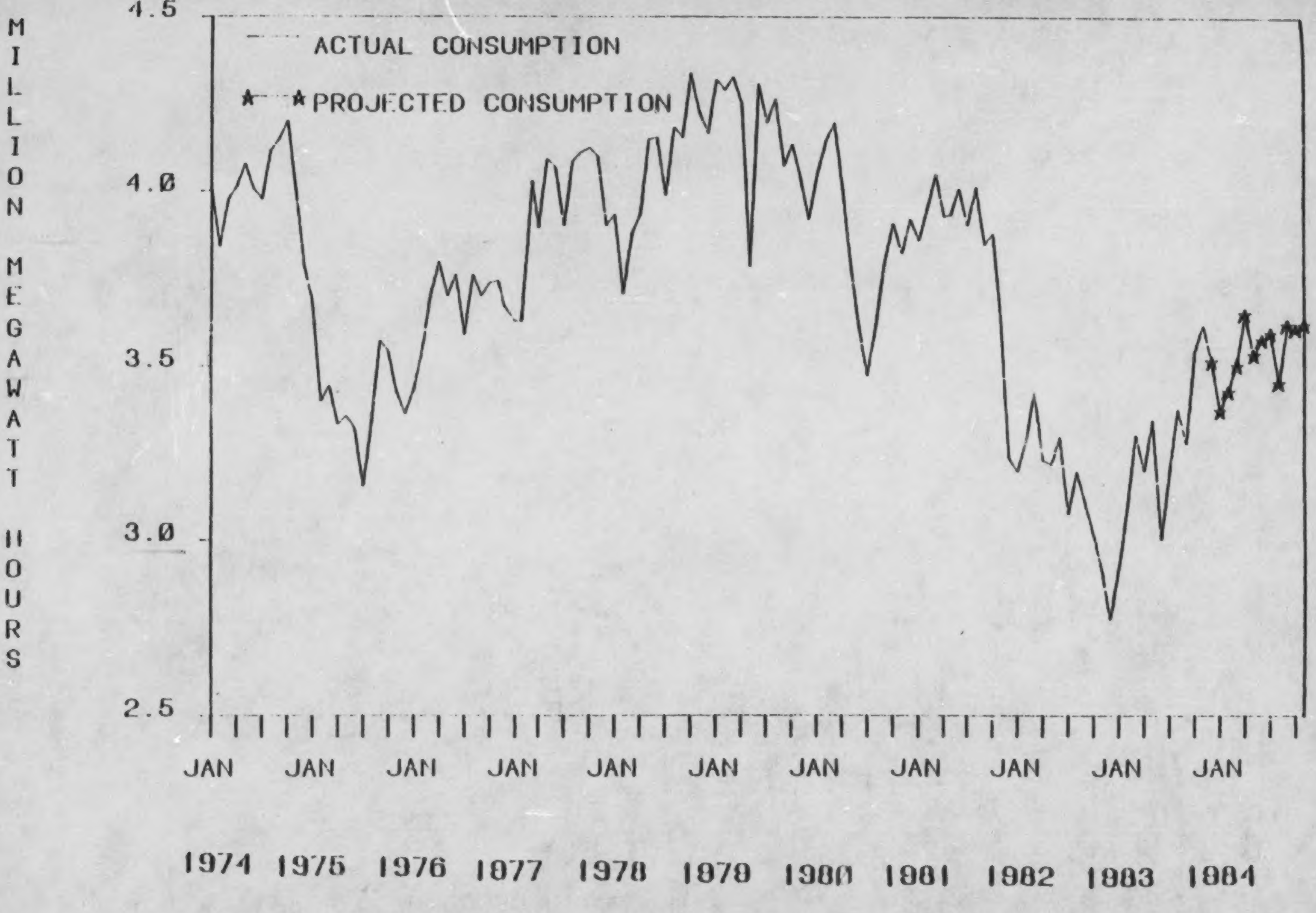
SOURCE: OHIO ELECTRIC UTILITY INSTITUTE AND THE OHIO DIVISION OF ENERGY, (EXCLUDING OVEC)

Table A-11. Independent Forecast of Ohio Electricity Demand
Industrial Sector
(1000 MWH)

	Lower 95% Confidence Limit	ODOE Forecast (1983-1984)	Upper 95% Confidence Limit	Actual (1982-1983)	Forecast Percentage Change
Novmeber	3,180	3,510	3,840	2,911	20.6
December	2,965	3,369	3,773	2,779	21.2
January	2,958	3,425	3,891	2,921	17.2
February	2,979	3,501	4,022	3,103	12.8
March	3,075	3,646	4,217	3,302	10.4
April	2,913	3,530	4,147	3,201	9.4
May	2,911	3,570	4,230	3,342	4.9
June	2,888	3,588	4,288	3,375	6.3
July	2,711	3,448	4,186	3,281	5.1
August	2,840	3,614	4,388	3,542	2.0
September	2,793	3,601	4,409	3,616	0.4
October	2,756	3,618	4,481		

Note: The forecast is based upon monthly summary statistics of the Ohio Electric Utilities Institute for eight major investor-owned electric utilities (excluding OVEC).

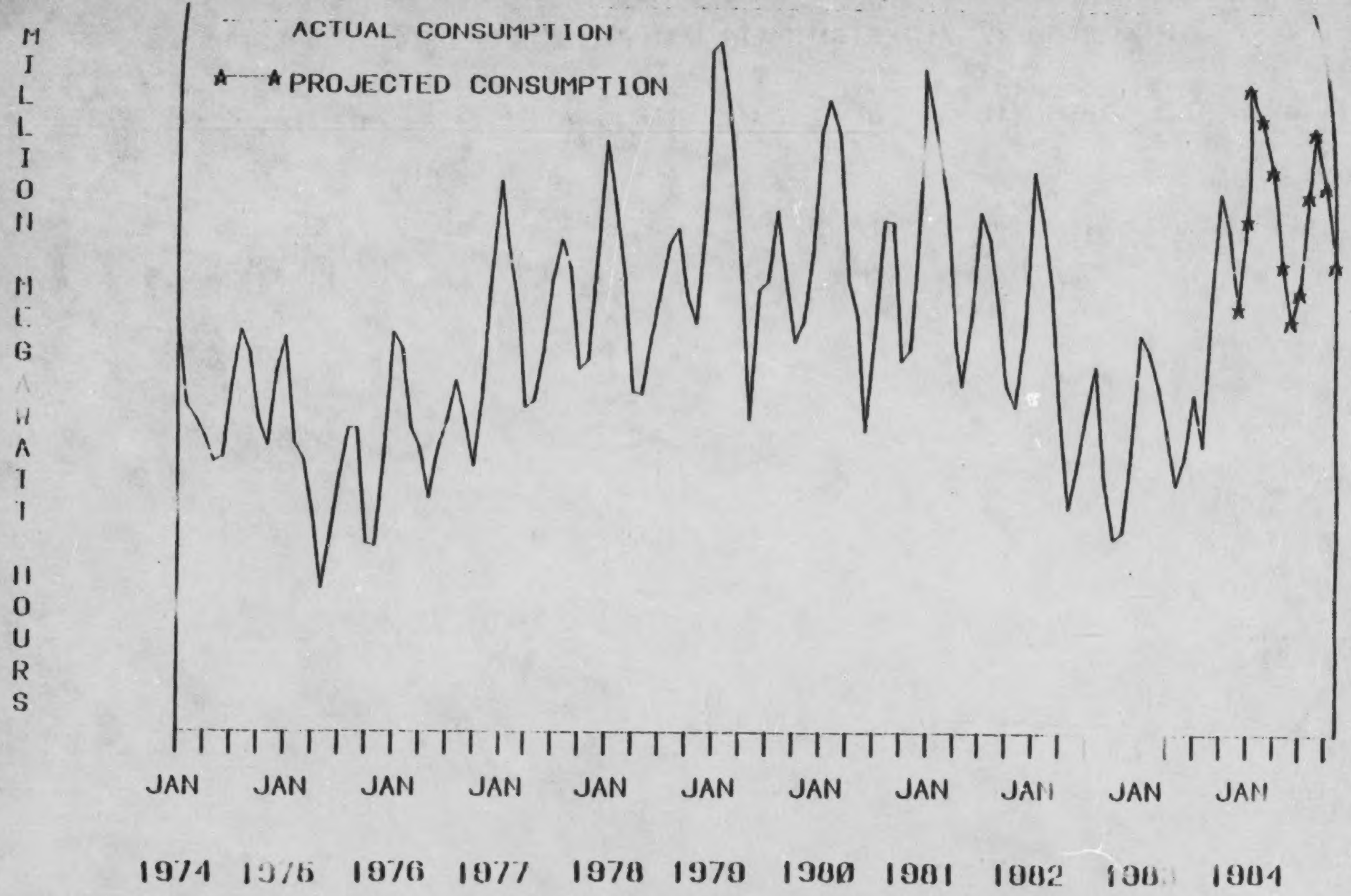
FIGURE A 3. MONTHLY OHIO INDUSTRIAL ELECTRICITY CONSUMPTION
ACTUAL AND PROJECTED (JANUARY 1972 - OCTOBER 1984)



SOURCE: OHIO ELECTRIC UTILITY INSTITUTE AND THE OHIO DIVISION OF ENERGY, (EXCLUDING OVEC)

[illegible]

ACTUAL AND PROJECTED (JANUARY 1974 - OCTOBER 1984)



SOURCE: OHIO ELECTRIC UTILITY INSTITUTE AND THE OHIO DIVISION OF ENERGY, (EXCLUDING OVEC)

Appendix B: Natural Gas

Table B-1. Cincinnati Gas and Electric Forecast of Natural Gas Requirements (MMCF)

	Actual Demand (1982-1983)	Utility Forecast (1983-1984)	Forecast % Change (Utility Forecast vs. Actual)	ODOE Forecast (1983-1984)	Forecast % Change (ODOE Forecast vs. Actual)
November	7,119	7,690	8.02	6,900	-3.08
December	8,634	11,298	30.85	9,900	14.66
January	11,681	12,034	3.02	11,890	1.79
February	9,441	10,533	11.57	9,480	0.41
March	7,980	8,427	5.73	7,650	-4.02
April	6,264	5,627	-10.17	5,170	-17.46
May	3,790	3,700	-2.37	3,350	11.61
June	2,779	2,587	-6.91	2,500	10.04
July	2,525	2,478	-1.86	2,280	-9.70
August	2,396	2,498	4.26	2,340	-2.34
September	*	2,743		2,900	
October	*	4,064		4,480	

*Actual Figures were not available.

Source: SG-2 forms of the reporting utility and the Ohio Division of Energy.

Table B-2. Columbia Gas of Ohio: Forecast of Natural Gas Requirements (MMCF)

	Actual Demand (1982-1983)	Utility Forecast (1983-1984)	Forecast % Change (Utility Forecast vs. Actual)	. ODOE Forecast (1983-1984)	Forecast % Change (ODOE Forecast vs. Actual)
Novmeber	24,508	23,932	-2.35	24,460	-0.20
December	28,892	34,093	18.00	33,040	14.36
January	37,735	40,188	6.50	40,020	6.06
February	30,828	31,580	2.44	32,090	4.09
March	26,890	26,664	-0.84	25,120	-6.58
April	21,713	19,786	-8.87	18,500	14.80
May	14,149	11,666	-17.55	13,300	6.00
June	9,233	9,207	-0.28	8,910	-3.50
July	8,127	7,482	-7.94	7,950	2.18
August	8,490	8,175	-3.71	8,500	-0.12
September	*	9,202		9,000	
October	*	14,392		15,600	

*Actual Figures were not available.

Source: SG-2 forms of the reporting utility and the Ohio Division of Energy.

Table B-3. Dayton Power and Light
Forecast of Natural Gas Requirements
(MMCF)

	Actual Demand (1982-1983)	Utility Forecast (1983-1984)	Forecast % Change (Utility Forecast vs. Actual)	ODOE Forecast (1983-1984)	Forecast % Change (ODOE Forecast vs. Actual)
November	4,748	5,407	13.88	5,130	8.05
December	5,657	7,388	30.60	7,400	30.81
January	7,352	8,418	14.50	9,130	24.18
February	7,754	8,679	11.93	8,630	11.30
March	4,482	6,626	47.84	5,670	26.51
April	5,768	4,974	-13.77	4,790	-16.96
May	2,878	2,829	-1.70	2,660	-7.57
June	2,003	2,064	3.05	1,770	-11.63
July	1,503	1,636	8.85	1,540	2.46
August	1,541	1,766	14.60	1,650	7.07
September	*	1,856		1,940	
October	*	3,099		3,130	

*Actual Figures were not available.

Source: SG-2 forms of the reporting utility and the Ohio Division of Energy.

Table B-4. East Ohio Gas:
Forecast of Natural Gas Requirements
(MMCF)

	Actual Demand (1982-1983)	Utility Forecast (1983-1984)	Forecast % Change (Utility Forecast vs. Actual)	ODOE Forecast (1983-1984)	Forecast % Change (ODOE Forecast vs. Actual)
November	26,062	27,660	7.13	30,360	16.49
December	31,981	37,401	16.95	40,160	25.57
January	40,743	43,476	6.97	46,850	15.27
February	34,047	39,282	15.38	38,560	13.26
March	31,759	32,861	3.47	32,190	1.36
April	31,847	29,709	-6.71	28,870	-9.35
May	25,881	25,405	-1.84	23,200	-10.36
June	20,393	20,403	0.05	19,500	-4.38
July	18,340	19,465	7.13	17,100	-6.76
August	19,347	19,145	-1.04	18,100	-6.45
September	*	21,076		19,740	
October	*	26,924		27,250	

*Actual Figures were not available.

Source: SG-2 forms of the reporting utility and the Ohio Division of Energy.

Table B-5. Independent Forecast of Ohio Natural Gas End User Requirements-Residential Sector (MMCF)

	Lower 95% Confidence Limit	ODOE Forecast (1983-1984)	Upper 95% Confidence Limit	Actual (1982-1983)	Forecast Percentage Change
November	18,100	28,700	39,400	26,841	7.11
December	35,300	46,300	57,300	38,216	21.38
January	46,800	57,900	69,000	50,065	15.00
February	42,900	54,100	65,300	51,699	4.66
March	27,600	38,800	50,000	38,557	0.56
April	16,900	28,100	39,400	36,593	23.12
May	8,800	13,200	19,800	20,915	-36.82
June	4,900	6,900	11,100	12,054	-42.76
July	3,800	5,300	8,500	7,789	-31.73
August	3,800	5,300	8,400	7,789	-24.34
September	4,600	6,400	10,300	*	
October	10,900	15,300	22,900	*	

*Actual figures were not available.

Table B-6. Independent Forecast of Ohio Natural Gas End User Requirements-Commercial Sector (MMCF)

	Lower 95% Confidence Limit	ODOE Forecast (1983-1984)	Upper 95% Confidence Limit	Actual (1982-1983)	Forecast Percentage Change
vember	9,600	13,600	17,500	11,872	14.14
ecember	17,900	21,900	25,900	16,959	29.13
nuary	2,245	25,700	27,930	21,976	16.81
ebruary	23,500	27,600	31,600	22,747	21.18
rch	17,700	21,800	25,800	16,520	31.88
ril	12,400	16,400	20,500	15,458	6.18
y	5,200	9,200	13,300	8,661	6.67
une	2,800	5,500	8,300	5,094	7.09
uly	2,200	4,300	7,400	3,508	23.60
gust	2,100	4,200	7,300	3,481	21.89
eptember	2,300	4,500	7,600	*	
ctober	3,500	7,500	11,600	*	

*Actual figures were not available.

Table B-7. Independent Forecast of Ohio Natural Gas End User Requirements-Industrial Sector (MMCF)

	Lower 95% Confidence Limit	ODOE Forecast (1983-1984)	Upper 95% Confidence Limit	Actual (1982-1983)	Forecast Percentage Change
November	10,800	18,700	26,600	16,757	11.82
December	12,100	21,100	30,000	16,152	30.35
January	13,800	23,600	33,300	18,409	28.05
February	13,200	23,600	34,000	19,208	22.77
March	12,400	23,200	34,100	18,008	29.03
April	10,700	22,000	33,300	17,588	25.09
May	8,600	20,200	31,800	15,449	30.59
June	7,200	19,100	31,000	13,553	40.90
July	5,500	17,600	29,700	11,678	50.46
August	7,100	19,400	31,700	12,812	51.43
September	7,800	20,200	32,700	*	
October	10,200	22,800	35,400	*	

*Actual figures were not available.

Table B-8. Independent Forecast of Ohio Natural Gas Requirements-Total-All Sectors (MMCF)

	Lower 95% Confidence Limit	ODOE Forecast (1983-1984)	Upper 95% Confidence Limit	Actual (1982-1983)	Forecast Percentage Change
November	49,000	69,700	90,400	65,684	6.15
December	72,500	93,800	115,100	78,907	18.89
January	89,900	111,500	133,100	102,323	8.95
February	69,300	91,000	112,700	86,178	5.60
March	50,000	71,800	93,600	74,561	-3.71
April	34,900	56,700	78,500	68,632	-17.33
May	28,800	40,400	52,000	48,974	-26.06
June	20,300	30,400	40,500	36,493	-24.71
July	18,000	28,000	38,000	32,412	-20.54
August	19,500	30,500	41,600	33,661	-13.93
September	21,000	339,000	46,800	*	
October	30,200	53,000	76,100	*	

*Actual figures were not available.

Table B-9. Projected Supply and Demand for Eight Major Ohio Natural Gas Utilities (MMCF)

COMPANY: CINN. GAS & ELEC.

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/83	10/83	11/83	12/83	1/84	2/84	3/84	4/84	5/84	6/84	7/84	8/84	SUMMER	WINTER	YEAR
SUPPLY	3055	4654	7424	10783	12718	11548	9477	6127	3820	2991	2783	2498	25928	51950	77878
DEMAND	3055	4654	7424	10783	12718	11548	9477	6127	3820	2991	2783	2498	25928	51950	77878
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0:0%	0.0%	0.0%	0.0%	0.0%

COMPANY: COLUMBIA GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/83	10/83	11/83	12/83	1/84	2/84	3/84	4/84	5/84	6/84	7/84	8/84	SUMMER	WINTER	YEAR
SUPPLY	11528	10327	24654	34828	40972	32359	27421	20539	12408	9933	7482	8175	80392	160234	240626
DEMAND	11528	10327	24654	34828	40972	32359	27421	20539	12408	9933	7482	8175	80392	160234	240626
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: DAYTON POWER & LIGHT

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/83	10/83	11/83	12/83	1/84	2/84	3/84	4/84	5/84	6/84	7/84	8/84	SUMMER	WINTER	YEAR
SUPPLY	2153	3515	5407	7388	8418	8679	6626	4974	2829	2064	1636	1766	18937	36518	55455
DEMAND	2153	3515	5407	7388	8418	8679	6626	4974	2829	2064	1636	1766	18937	36518	55455
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	[illegible]	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: EAST OHIO GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/83	10/83	11/83	12/83	1/84	2/84	3/84	4/84	5/84	6/84	7/84	8/84	SUMMER	WINTER	YEAR
SUPPLY	23075	29085	29681	39265	44057	40405	33783	30048	25661	20506	18625	19449	166449	187191	353640
DEMAND	23075	29085	29681	39265	44057	40405	33783	30048	25661	20506	18625	19449	166449	187191	353640
DEFICIENCY	0	0	0	0	0	0			0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.[illegible]	[illegible]	0.0%	0.0%	0.0%	0.0%	0.0%	[illegible]	0.0%

Table B-9. Projected Supply and Demand for Eight Major Ohio Natural Gas Utilities
(Cont'd) (MMCF)

COMPANY: NATIONAL GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/83	10/83	11/83	12/83	1/84	2/84	3/84	4/84	5/84	6/84	7/84	8/84	SUMMER	WINTER	YEAR
SUPPLY	1145	1145	1285	1365	1525	1445	1448	1200	1160	1094	1070	1108	7922	7068	14990
DEMAND	1028	913	985	1060	1510	1445	1448	1200	1160	1094	1070	1108	7573	6448	14021
DEFICIENCY	-117	-232	-300	-305	-15	0	0	0	0	0	0	0	-349	-620	-969
% DEFICIENCY	-11.4%	-25.4%	-30.5%	-28.8%	-1.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-4.6%	-9.6%	-6.9%

COMPANY: OHIO GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/83	10/83	11/83	12/83	1/84	2/84	3/84	4/84	5/84	6/84	7/84	8/84	SUMMER	WINTER	YEAR
SUPPLY	285	513	717	885	1188	850	729	478	327	404	409	229	2645	4369	7014
DEMAND	285	513	717	903	1188	850	729	478	327	404	409	229	2645	4387	7032
DEFICIENCY	0	0	0	18	0	0	0	0	0	0	0	0	0	18	18
% DEFICIENCY	0.0%	0.0%	0.0%	2.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.4%	0.3%

COMPANY: RIVER GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/83	10/83	11/83	12/83	1/84	2/84	3/84	4/84	5/84	6/84	7/84	8/84	SUMMER	WINTER	YEAR
SUPPLY	227	316	457	619	747	732	477	321	206	146	192	200	1608	3032	4640
DEMAND	227	316	457	619	747	732	477	321	206	146	192	200	1608	3032	4640
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: WEST OHIO GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/83	10/83	11/83	12/83	1/84	2/84	3/84	4/84	5/84	6/84	7/84	8/84	SUMMER	WINTER	YEAR
SUPPLY	545	880	1192	1418	1822	1745	1298	948	560	400	324	392	4049	7475	11524
DEMAND	545	880	1192	1418	1822	1745	1298	948	560	400	324	392	4049	7475	11524
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

APPENDIX B-10

Quantitative Analyses of Historical Natural Gas Requirements in Ohio

As indicated previously in Figures 11 through 17, the behavior of annual natural gas disposition in all sectors of Ohio has displayed distinctly different trends during the sixties and early seventies, as opposed to the rest of the seventies and the early eighties. Such discontinuous time variant trends characterize the behavior of almost all sectoral energy disposition in Ohio as well as the nation.

The Ohio Division of Energy has developed an analytical in-house methodology for the modeling and assessment of discontinuous time variant trends in annual economic and energy data series. As a result of this development, the Division is in a better position to distinguish between temporary deviations from established trends, e.g. recessions or severe climatic conditions, and changes in established long-term trends. Continued application of this methodology will lead to improved understanding of the systemic factors which are responsible for the observed discontinuities in the historical time paths of the corresponding data series. Extraction of such critical information from historical observation will invariably lead to more accurate forecasts of Ohio's future energy requirements by sector or by fuel type, and help identify possible shortages before they become critical.

A simultaneous time-path model of historical natural gas end-user requirements in Ohio follows in Appendix B, Tables B-10 and B-10A, with sectoral end-user requirement forecasts for calendar year 1984 included earlier in Table 17.

The estimated parameters of the model describe the dynamic behavior of the magnitudes of systemic trends in Ohio sectoral natural gas requirements between 1960-1982, as well as the magnitudes of significant temporary deviations from such established trends. Such temporary deviations are interpreted to reflect the magnitude of systemic responses to temporary alterations in the historically determined "normal" operating conditions of the sectoral system in question. They may also reflect possible alterations in the methods of measurement and in the accounting procedures involved in data collection and reporting practices, which may not be known at this time. The Ohio Division of Energy makes every effort to keep the data definitions employed consistent over the domain of time under consideration.

As far as long-term trends are concerned, it is clear that the annual rates of change of natural gas requirements were positive for all sectors between 1960 and 1970. They became negative for all sectors between 1970 and 1972, and have remained so to date. It is also clear that the recession of 1975 has resulted in a permanent decrease in the level of annual industrial natural gas requirements.

Any upturn in sectoral natural gas consumption rates will probably require significant increases in real state income relative to the real expenditures on natural gas by the respective sectoral end-users. Although it is clear that negative rates of growth cannot be sustained indefinitely, and the current levels of annual natural gas requirements in all sectors are close to those of 20 years ago, it can nevertheless be inferred that a sustained upturn in sectoral natural gas requirements in Ohio is not to be expected as long as:

1. The relative share of expenditures on energy resources continues to increase statewide.
2. The comparative advantage of the state's industrial base continues to deteriorate, thus attracting fewer firms to locate in Ohio.
3. The price per Btu of natural gas relative to that of heating oil or electricity continues to increase.

Table B-10. Integrated Time Path Models of Ohio Sectoral Natural Gas Requirements

```
SYSTEM: SYS1
                                                          THIRD  STAGE
MODEL:    RS1
DEP VAR:  NGRSPOH

                            PARAMETER      STANDARD                     APPROX          VARIABLE
VARIABLE          DF         ESTIMATE         ERROR        T RATIO    PROB>|T|           LABEL

INTERCEPT          1       364.223397      2.337890       155.7915      0.0001
T                  1        10.989251      0.342627        32.0735      0.0001
T6                 1        -3.528096      0.300701       -11.7329      0.0001
T12                1       -14.003601      0.766551       -18.2683      0.0001
T19                1       -10.700656      1.981765        -5.3996      0.0001
DUM7               1       -26.956922      1.613358       -16.7086      0.0001
--------------------------------------------------------------------------------------

MODEL:    CX
DEP VAR:  NGCXPOH

                            PARAMETER      STANDARD                     APPROX          VARIABLE
VARIABLE          DF         ESTIMATE         ERROR        T RATIO    PROB>|T|           LABEL

INTERCEPT          1       104.728652      1.700372        61.5916      0.0001
T                  1        10.477375      0.332555        31.5057      0.0001
T12                1       -14.992926      0.530098       -28.2833      0.0001
DUMC               1       -27.599569      2.958169        -9.3300      0.0001
D75                1       -20.746263      3.299454        -6.2878      0.0001
D77                1       -19.907347      3.312535        -6.0097      0.0001
--------------------------------------------------------------------------------------

MODEL:    IX1
DEP VAR:  NGIXPOH

                            PARAMETER      STANDARD                     APPROX          VARIABLE
VARIABLE          DF         ESTIMATE         ERROR        T RATIO    PROB>|T|           LABEL

INTERCEPT          1       214.032061      4.910471        43.5869      0.0001
T                  1        14.235326      0.654130        21.7622      0.0001
T10                1         5.547303      0.364515        15.2183      0.0001
T13                1       -26.956922      1.777834       -15.1628      0.0001
DUMC               1        27.599569      3.259743         8.4668      0.0001
DUM9               1       -84.678539     10.133049        -8.3567      0.0001
D77                1       -48.651277     10.246929        -4.7479      0.0003
D79                1        26.495242     10.166179         2.6062      0.0207
D82                1       -58.103418     11.919962        -4.8745      0.0002
```

Table B-10. Integrated Time Path Models of Ohio Sectoral Natural Gas Requirements (Continued)

```
MODEL:    TR
DEP VAR: NGTRPOH

                          PARAMETER     STANDARD                   APPROX          VARIABLE
VARIABLE            DF     ESTIMATE        ERROR      T RATIO    PROB>|T|            LABEL

INTERCEPT            1     7.965974     0.562087      14.1721      0.0001
T                    1     0.796180     0.124554       6.3923      0.0001
T6                   1    -0.992882     0.176335      -5.6307      0.0001

DUM9                 1    -2.510593     0.836833      -3.0001      0.0074
------------------------------------------------------------------------------

MODEL:    EU
DEP VAR: NGEUPOH

                          PARAMETER     STANDARD                   APPROX          VARIABLE
VARIABLE            DF     ESTIMATE        ERROR      T RATIO    PROB>|T|            LABEL

INTERCEPT            1     2.685701     0.504874       5.3195      0.0001
T6                   1     4.520978     0.210630      21.4641      0.0001
T10                  1    -5.547303     0.312898     -17.7288      0.0001
DUM9                 1    -7.164357     1.275806      -5.6156      0.0001
------------------------------------------------------------------------------

MODEL:    TT1
DEP VAR: NGTTPOH

                          PARAMETER     STANDARD                   APPROX          VARIABLE
VARIABLE            DF     ESTIMATE        ERROR      T RATIO    PROB>|T|            LABEL

INTERCEPT            1   693.635784     6.042981     114.7837      0.0001
T                    1    36.498132     0.762976      47.8365      0.0001
T12                  1   -55.953449     1.836053     -30.4749      0.0001
T19                  1   -10.700656     2.183799      -4.9000      0.0001
DUM9                 1   -84.678539    10.133049      -8.3567      0.0002
D75                  1   -20.746263     3.635821      -5.7061      0.0001
D77                  1   -68.558625    10.283497      -6.6669      0.0001
D79                  1    26.495242    10.166179       2.6062      0.0001
D82                  1   -58.103418    11.919962      -4.8745      0.0207
                                                                   0.0002
```

Table B-10A (Statistical Summary) Integrated Time Path Models of Ohio Sectoral Natural Gas Requirements

```
SYSTEM: SYS1                                   THIRD  STAGE

                                       COVARIANCE ACROSS MODELS

                       RS1.NGRSPOH      CX.NGCXPOH      IX1.NGIXPOH      TR.NGTRPOH      EU.NGEUPOH      TT1.NGTTPOH

       RS1.NGRSPOH     19.77321796     -1.74135665       7.07782546      0.12350048     -0.87215898      12.23483442
       CX.NGCXPOH      -1.74135665      7.82539250      -3.71447719      0.39979423     -0.38574863       2.19341711
       IX1.NGIXPOH      7.07782546     -3.71447719      59.70699106      1.42179694     -0.02780939      64.87959323
       TR.NGTRPOH       0.12350048      0.39979423       1.42179694      0.69762996     -0.37549911       1.35814469
       EU.NGEUPOH      -0.87215898     -0.38574863      -0.02780939     -0.37549911      1.74867749       1.33417492
       TT1.NGTTPOH     12.23483442      2.19341711      64.87959323      1.35814469      1.33417492     100.35948172

                                       CORRELATION ACROSS MODELS

                       RS1.NGRSPOH      CX.NGCXPOH      IX1.NGIXPOH      TR.NGTRPOH      EU.NGEUPOH      TT1.NGTTPOH

       RS1.NGRSPOH      1.00000000     -0.13998967       0.20599116      0.03325197     -0.14832082       0.27465039
       CX.NGCXPOH      -0.13998967      1.00000000      -0.17184308      0.17110823     -0.10427891       0.07826885
       IX1.NGIXPOH      0.20599116     -0.17184308       1.00000000      0.22029895     -0.00272160       0.83813952
       TR.NGTRPOH       0.03325197      0.17110823       0.22029895      1.00000000     -0.33997070       0.16231336
       EU.NGEUPOH      -0.14832082     -0.10427891      -0.00272160     -0.33997070      1.00000000       0.10071142
       TT1.NGTTPOH      0.27465039      0.07826885       0.83813952      0.16231336      0.10071142       1.00000000

                                       INV CORRELATION ACROSS MODELS

                       RS1.NGRSPOH      CX.NGCXPOH      IX1.NGIXPOH      TR.NGTRPOH      EU.NGEUPOH      TT1.NGTTPOH

       RS1.NGRSPOH      1.20909764      0.33103182       0.44202780      0.03292899      0.30323100      -0.76435322
       CX.NGCXPOH       0.33103182      1.44511460       1.32498639     -0.25541882      0.24728804      -1.29799578
       IX1.NGIXPOH      0.44202780      1.32498639       4.72165060     -0.44135922      0.48546700      -4.15976383
       TR.NGTRPOH       0.03292899     -0.25541882      -0.44135922      1.24906751      0.38768716       0.13908311
       EU.NGEUPOH       0.30323100      0.24728804       0.48546700      0.38768716      1.27446514      -0.70080654
       TT1.NGTTPOH     -0.76435322     -1.29799578      -4.15976383      0.13908311     -0.70080654       4.84598919

                                       INV COVARIANCE ACROSS MODELS

                       RS1.NGRSPOH      CX.NGCXPOH      IX1.NGIXPOH      TR.NGTRPOH      EU.NGEUPOH      TT1.NGTTPOH

       RS1.NGRSPOH      0.06114825      0.02661203       0.01286466      0.00886599      0.05156797      -0.01715838
       CX.NGCXPOH       0.02661203      0.18466992       0.06129792     -0.10931689      0.06684904      -0.04631706
       IX1.NGIXPOH      0.01286466      0.06129792       0.07908036     -0.06838598      0.04751079      -0.05373743
       TR.NGTRPOH       0.00886599     -0.10931689      -0.06838598      1.79044418      0.35100556       0.01662198
       EU.NGEUPOH       0.05156797      0.06684904       0.04751079      0.35100556      0.72881658      -0.05290102
       TT1.NGTTPOH     -0.01715838     -0.04631706      -0.05373743      0.01662198     -0.05290102       0.04828631

WARNING: DEGREES OF FREEDOM NOT ADJUSTED FOR RESTRICTIONS

WEIGHTED MEAN SQUARE ERROR FOR SYSTEM =    1.551251  WITH    113 DFS

WEIGHTED R-SQUARE FOR SYSTEM = 0.9766
THIS IS THE R-SQUARE THAT CORRESPONDS TO THE A
```

S6260-6

STATE OF OHIO
Richard F. Celeste, Governor
Alfred S. Dietzel, Director

Department of Development
P.O. Box 1001 • Columbus, Ohio • 43216-1001

August 15, 1984

The Honorable Richard F. Celeste
Governor
Statehouse
Columbus, Ohio 43215

Dear Governor Celeste:

Pursuant to ORC 4905.14, each public electric and gas utility in Ohio is required to file with the Ohio Department of Development, Division of Energy, a report on July and November 1, containing projections of the utility's total demand and fuel supply over the following 12 months. As required by the same statute, we sent copies of the utilities' latest reports to you in July.

The attached report is a summary and analysis of these reports, also required by 4905.14. It includes an evaluation of the Ohio natural gas and electric situation for the coming winter and the next twelve months. It appears at this time that fuel supplies for manufacturing and heating, and for generating electricity will be adequate, even with a 10 percent colder than normal winter and Ohio's increasing industrial activity.

The only foreseeable supply disruption would be as a result of a prolonged coal miners' strike which could occur when the current United Mine Workers of America contract expires on September 30, 1984. As indicated in the report all Ohio utilities have stockpiles in excess of 60 days.

The Division of Energy in cooperation with the Ohio electric utility industry, other large coal users, the PUCO, and other state agencies, is already prepared to handle any such disruption of coal supplies. A summary of these preparations is included in this report. We are confident that such preparations will assure that no Ohioan suffers undue hardship should a strike occur.

Sincerely,

Al Dietzel

Alfred S. Dietzel
Director

ASD/kt

cc/Thomas Smith, Senate Clerk
Ty Marsh, Clerk of the House
Michael Del Bane, PUCO Chairman

30 East Broad Street (614) 466-2480

EXECUTIVE SUMMARY

Based on one year forecasts submitted by each of the major electric and natural gas utility companies serving Ohio, and based on independent projections of the Ohio Division of Energy, the supplies of fuels for generating electricity and supplies of natural gas for heating and manufacturing are forecast to be adequate through June 1985. The forecast takes into account the possibility of a 10 percent colder than normal winter and the increased energy demand resulting from accelerating statewide economic recovery.

Supplies of coal, used to generate more than 95 percent of electricity in Ohio, are not expected to fall below a safe two month supply margin for any generating utility company through June 1985, except for the duration of a possible coal strike when the United Mine Workers of America contract expires September 30, 1984. Seven of the eight major electric utilities in Ohio are projected to have in excess of 85 days supply of coal on October 1, 1984. One utility is projected to have 60 days supply. Under these circumstances no serious curtailments are expected unless there is a prolonged coal strike.

Supplies of the eight major natural gas distribution companies serving the state are expected to be adequate through June 1985. In addition to the actual delivered product, gas in storage will be sufficient to meet additinal demand in the event of a 10 percent colder than normal winter or strong industrial recovery.

As in past years, roughly fifty percent of the coal supplied to Ohio electric utilities is from out of state sources. Approximately ninety percent of Ohio's natural gas supply will continue to come from out of state sources.

Summary of Coal Strike Preparations

Under Ohio Revised Code Section 1551.09, the Department of Development, Division of Energy (DOE) is given reponsibility for management of energy supply emergencies as they occur within the state. DOE is responsible for the promulgation and implementation of energy emergency rules which, upon declaration of an energy emergency by the Governor, may be placed in effect to avoid disproportionate hardships on Ohio energy users. Depending on the fuel experiencing the disruption, other State agencies may be involved with emergency management, as is the case with the Public Utilities Commission of Ohio with regard to potential electric utility coal supply interruptions.

Under this mandate, DOE is currently preparing for a possible disruption of coal supplies due to a strike of the United Mine Workers of America (UMWA). The UMWA's current labor contract with the Bituminous Coal Operators of America (BCOA) will expire September 30, 1984. While the UMWA and the BCOA are currently negotiating the terms of a new multi-year contract, there is no indication to date that any such contract negotiations would be completed and a contract ratified by the UMWA membership by October 1. In past years, a UMWA strike has resulted whenever no new contract is ratified by the end of the current contract's term.

As part of its routine preparations, DOE is following all information obtainable regarding the contract negotiations. Indications are that each side is attempting to reach an agreement before the September 30 deadline. Failing this, the UMWA has given itself the option of striking operating companies on a selective basis, as well as retaining the right to call a general strike similar to those of past years.

While DOE does not expect such a scenario to materialize, preparations have been based upon the worst case scenario of a prolonged strike. Under such a scenario, coal supplies to electric utilities and other large coal users could be severely restricted. Under extreme circumstances, electricity consumers could be affected.

DOE, in cooperation with the PUCO, has begun collecting data on the stockpiles and daily drawdown rates of electric generation station operating utilities. The data show all utilities in the state with stocks sufficiently high to meet a supply disruption of moderate length with no difficulty. DOE has established a mechanism with the utilities to assure that these data continue to be provided in a timely and consistently formatted form throughout the period of any supply disruption.

During any energy supply emergency, it is most essential to assure that the consuming public receive accurate and consistent supply availability information. DOE, the PUCO, and the electric utilities have been working since mid-summer 1984 to assure that a central information clearinghouse is established and working well in advance of any disruption, and continues to operate for the duration of the emergency. DOE will serve as this central clearinghouse, providing information to the Governor, the General Assembly, the PUCO, and the media. Utility provided information will be consistent with that available from DOE. DOE will also serve as principal liaison between the state, the federal government, and other contiguous states concerned with Ohio's handling of the disruption.

DOE prefers to mitigate any energy emergency through voluntary measures for as long as possible. Under such a scheme, Ohioans should be able to go about their "business as usual". However, should for any reason, this potential coal disruption or any other energy supply emergency become threatening to the health or welfare of Ohio energy consumers, the Division is prepared to invoke its mandatory energy emergency management rules. Fortunately, there is no present indication that such drastic measure will be necessary should the potential coal disruption transpire.

An Assessment of the Supplies of Natural Gas and Fuels for Generating Electricity in Ohio from July 1984 - June 1985

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I. INTRODUCTION

This report has been prepared by the Ohio Department of Development, Division of Energy (ODOE), pursuant to Section 4905.14(E) of the Ohio Revised Code. The statute requires ODOE to provide a summary, analysis and recommendations based on the Ohio public utilities' energy supply and demand projections for the twelve month period beginning July 1, 1984. In accordance with Section 4905.14(D), a copy of each utility's July forecast was submitted to the Governor, Clerk of the Ohio Senate, the Legislative Clerk of the Ohio House of Representatives, and the Public Utilities Commission of Ohio on July 10, 1984. The utilities' forecasts and historical data are the primary input for this report. Several other sources of information have also been used, including historical energy data developed by the Ohio Division of Energy, federal energy reports, and publications from the American Gas Association and the Electric Power Research Institute. A substantial and successful effort has been undertaken to develop a comprehensive data base which supports the Division of Energy's ability to provide timely analyses and forecasts.

Objectives

Major objectives guiding the preparation of this report are:

1. To provide historical data on energy usage, projections of energy availability and projections of consumption for the coming year.
2. To provide an analysis and an interpretation of short-term changes in energy supply and demand.
3. To provide an assessment of the adequacy of natural gas and electric energy supply for the upcoming twelve months.
4. To provide a strategy to prevent or mitigate any interruption or curtailment of service, if a potential deficiency is identified.

Requirements and Scope of This Report

Utilities are required to file short-term forecast information by Ohio Revised Code Section 4905.14, effective July 1, 1978. The Division prepares a summary and analysis of this information under paragraph (E) of this section.

The municipal utilities, industrial facilities and the rural electric cooperatives are not required to file the semi-annual report. Accordingly, this report incorporates data from the major electric and gas utilities serving the state. The Ohio Division of Energy estimates that in 1983 the major utilities provided approximately 90 percent of the electricity consumed in the state and 98 percent of the natural gas, excluding self-help gas.

Ohio Division of Energy Forecasts

As part of its analysis, the Ohio Division of Energy makes its own independent forecasts to serve as validation checks. The Division has the capability to forecast monthly demand by utility and for the state as a whole within a reasonable level of error (less than five percent in most cases). Such forecasts are based on historical month-by-month actual consumption for both electricity and natural gas and other appropriate variables such as population, income, and temperature data. As in any forecast, certain important socioeconomic conditions are assumed in the independent forecasts. These assumptions are:

1. Energy consumption generally follows its historical pattern.
2. Socio-economic changes have a minimal effect on short-run energy consumption.

Overview of This Report

The report is divided into two parts: electric energy and natural gas. Materials presented in these two parts are, for the most part, parallel in arrangement. They contain:

(a) a profile of reporting utilities;

(b) historical sources of supplies and suppliers;

(c) consumption history by sector, utility, and state;

(d) the utilities' forecasts and independent forecasts by the Ohio Division of Energy.

Temperature and Energy Consumption

Changes in the observed annual energy requirements of the three major consuming sectors (industrial, commercial, residential) may be explained by a variety of factors. Temperature is a variable which explains much of the observed variation. It is particularly significant in the residential and commercial sectors, during summer and winter periods, when electricity and natural gas are used to maintain comfortable room temperatures.

Two indicators which measure temperature-sensitive energy requirements are heating degree days and cooling degree days. The daily mean temperature is obtained by adding together the maximum and minimum temperatures reported for the day and dividing the total by two. When the daily mean temperature is 65^{0} F, the degree day total is zero. Each degree of mean temperature below 65^{0} F is counted as one heating degree day. This indicator is convenient because the amount of heat required to maintain a certain temperature level is proportional to heating degree days.

The cooling degree days are defined similarly: Each degree of mean temperature above 65° F is counted as one cooling degree day. If the daily mean temperature is 65° F or lower, the cooling degree day total is zero.

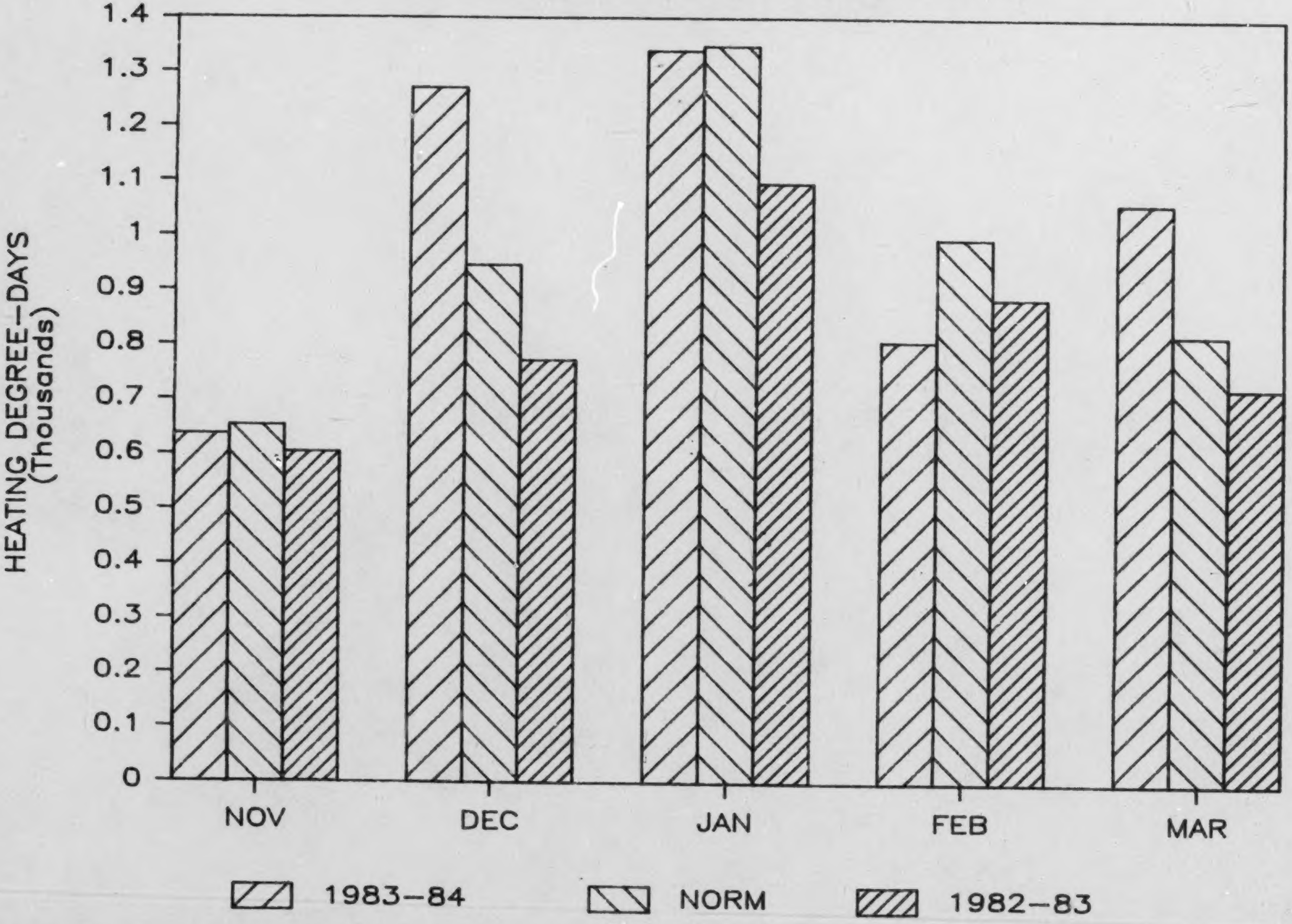
Since most homes and commercial buildings in Ohio are heated by natural gas, the reporting gas utilities are required to submit supply and demand forecasts under a normal winter scenario and a 10 percent colder than normal winter scenario. In addition, the relationship between natural gas consumption and heating degree days is closely monitored during the winter heating season (from November through March). Table 1 and Figure 1 show, for the past two heating seasons, population-weighted state heating degree day summaries. In addition, a normal heating degree day series, defined as the 30-year average of the years 1941 to 1970, is also presented.

TABLE 1. POPULATION-WEIGHTED
HEATING DEGREE-DAY SUMMARY FOR OHIO
MARCH 1984

MONTH	1983-1984	NORM	1982-1983
NOVEMBER	638	654	606
DEVIATION FROM NORM	-2.5%		-7.3%
DEVIATION FROM PREVIOUS YEAR	5.3%		-4.1%
DECEMBER	1272	948	774
DEVIATION FROM NORM	34.2%		-18.4%
DEVIATION FROM PREVIOUS YEAR	64.3%		-20.3%
JANUARY	1341	1350	1099
DEVIATION FROM NORM	-0.7%		-18.6%
DEVIATION FROM PREVIOUS YEAR	22.0%		-28.4%
FEBRURARY	809	997	888
DEVIATION FROM NORM	-18.9%		-10.9%
DEVIATION FROM PREVIOUS YEAR	-8.9%		-16.7%
MARCH	1062	822	726
DEVIATION FROM NORM	29.2%		-11.7%
DEVIATION FROM PREVIOUS YEAR	46.3%		-11.9%

SOURCE: National Oceanic and Atmospheric Administration, Historical Climatology Series 5-1 and the Ohio Division of Energy.

FIG. 1. POPULATON-WEIGHTED DEGREE-DAYS FOR OHIO WINTER HEATING SEASONS (1982 AND 1983)



II. ELECTRICITY

This section is based on the July forecasts filed by nine major Ohio electric utilities. Two of these, Columbus and Southern Ohio Electric Company and Ohio Power Company, are subsidiaries of the American Electric Power Company. Since American Electric Power operates as a centrally dispatched, integrated distribution system, the report reviews forecasts of demand and fuel adequacy for the entire American Electric Power Company. The Allegheny Power System is also a centralized power generation and distribution system. One subsidiary Monongahela Power, operates in Ohio. Thus, the forecasts of eight utilities are presented in the report. They are:

1. Allegheny Power System (APS)
    - Monongahela Power
    - Other out-of-state utilities not subject to reporting
2. American Electric Power Company (AEP)
    - Columbus and Southern Ohio Electric Company (C&SOE)
    - Ohio Power Company (OP)
    - Other out-of-state utilities not subject to reporting
3. Cincinnati Gas and Electric Company (CG&E)
4. Cleveland Electric Illuminating Company (CEI)
5. Dayton Power and Light Company (DP&L)
6. Ohio Edison Company (and its subsidiary Pennsylvania Power) (OE)
7. Ohio Valley Electric Corporation (OVEC)
8. Toledo Edison Company (TE)

With the exception of OVEC, each of these is an investor-owned utility supplying electricity to residential, commercial, and industrial customers in its service areas. The Ohio Valley Electric Corporation is a single-customer utility supplying power for the uranium enrichment plant at Piketon, Ohio. It also sells surplus generation to other electric utilities.

Supply and Generation

Source/Supplier of Fuel for Electric Generation

Fuels used in Ohio for electric generation include coal, oil, natural gas and nuclear fuel. Nuclear fuel sources are not monitored by the Division. All other fuels are monitored through the utilities' monthly reports. Tables 2 and 3 (following) list coal and oil deliveries to power plants located in Ohio. The main sources of supply and/or suppliers of these fuels remain the same as in the last reporting period.

Coal deliveries to Ohio electric plants during the twelve months ending April 1984, increased by 5,213,900 tons from the previous twelve month period, an increase of 13.1 percent (Table 2 and Figure 2). Deliveries of oil to Ohio power plants decreased by 247.7 barrels during the twelve months ending April 1984 from the previous twelve month period, a decrease of 33.0 percent (Table 3 and Figure 3). The increase in coal deliveries is attributable to increased generation over the previous twelve month period, while the decrease in oil deliveries was occasioned by a significantly large purchase of oil by the Ohio Edison Company in August 1982.

Electric Generation by Type of Fuel

Coal remains the main source of fuel for electric generation in Ohio, a condition which is not expected to change in the future. In the twelve month period ending April 1984, 96.0 percent of the total electricity generated in Ohio was from coal. Electricity generated by gas and oil continues to be a negligible 0.1 percent of total generation. Nuclear-generated electricity accounted for 3.9 percent of electricity generated in the state in the twelve months ending April 1984. From April through August 1982, Davis-Besse was inoperative due to a shut down for maintenance. It began generating electricity in September 1982 and was off line for refueling in July 1983. Operations resumed in September 1983 with the next refueling scheduled for August 1984. Operations are expected to resume in November 1984.

Table 4 and Figure 4 show the combined monthly totals of the reporting utilities' net generation from Ohio plants. Historical power plant fuel consumption and fuel stocks are displayed in Table 5.

Historical Behavior of Sectoral Requirements

Since the 1973 OPEC oil embargo and because of the escalation of energy prices, the pattern of electricity consumption in Ohio has changed dramatically. Increasing prices have stimulated conservation activities and fostered economic conditions that have resulted in reduced growth rates in the demand for electricity.

Electricity consumption by the residential and commercial sectors exhibits regular seasonal patterns while the industrial sector fluctuates widely with general economic conditions. (See Appendix A). The mild winter of 1982-83 resulted in decreased residential sector consumption, particularly during the months of January through March (Table 6 and Figure 5A). The relatively severe weather of December 1983 and March 1984 resulted in increased residential consumption. In December 1982, industrial electricity consumption dipped lower than any previously recorded consumption level since January 1971. A severe downturn in the manufacturing sector, particularly in automobile-related industries, had resulted in a monthly industrial demand level of 3100 to 3400 megawatt-hours. Beginning in 1983 with the general economic recovery, industrial demand for electricity has gradually increased. The March consumption of 4020 megawatt-hours is the highest monthly industrial consumption since March 1981.

For the twelve month period ending in April 1984, total electricity consumption in the state was 10.5 percent higher than during the preceding twelve month period (see Table 6 and (Figures 5A, 5B). Comparing 1982-83 with 1983-84 usage, residential sector consumption rose 8.2 percent, commercial sector consumption rose 5.9 percent and industrial sector consumption rose 16.2 percent.

Twelve Month Electricity Demand Forecasts

Each electric utility submits a forecast of total service area demand for July 1984 through June 1985. These forecasts are displayed in Appendix A, Tables A-1 through A-8, along with independent forecasts prepared by the Ohio Division of Energy. The Ohio Division of Energy also prepares independent twelve month forecasts of electricity demand for the state of Ohio, by sector. These forecasts are displayed in Appendix A, Tables A-9 through A-12.

Electric Demand Forecasts by Utility Service Area

The Ohio Division of Energy utility service area forecasts are based on monthly data from utility reports from January 1970 through March 1984. No independent forecast is provided for OVEC, because this utility has only one customer whose demand is pre-arranged. Because of the overlapping months for utility forecasts submitted on July 1 and November 1, the utilities may elect to use their previous forecasts for those overlapping months in the new forecasting period.

Two utilities, Allegheny Power System and Cincinnati Gas and Electric, retained their forecasts submitted in November for the months July 1984 through October 1984. Six utilities adjusted their forecasts. American Electric Power, Dayton Power and Light, and Toledo Edison raised each months's forecast for an average change of 7.1, 2 and 2.2 percent, respectively. Cleveland Electric Illuminating, Ohio Edison and Ohio Valley Electric Corporation raised some forecasts and lowered others for an average change of .4, .7 and -1.6 percent, respectively.

The forecasts prepared by ODOE have been revised since November. The ODOE forecast for each month is generally higher than the corresponding forecast of Allegheny Power System, Cleveland Electric Illuminating, Cincinnati Gas and Electric, and Ohio Edison. American Electric Power, Dayton Power and Light, and Toledo Edison have submitted forecasts that are higher than ODOE's forecast for some months and lower than ODOE's forecast for some months. (See Appendix A).

Assessment of Utility Fuel Adequacy

Tables 7-A and 7-B present the utilities' projections of deliveries, consumption, and end-of-month stocks of coal and oil for the generation of electricity. Table 7-C presents the Division's independent assessment of the adequacy of supply of generating fuels. The Division's projections are presented for the CAPCO Group of utilities, which include Cleveland Electric Illuminating, Ohio Edison, and Toledo Edison; for the American

Electric Power and Allegheny Power Systems, and for Dayton Power and Light, Cincinnati Gas and Electric, and the Ohio Valley Electric Corporation.

Coal

The Division's projections, as well as those of the electric utilities indicate an adequate supply of coal throughout the forecast period for each utility serving the state.

The current United Mine Workers of America contract expires September 30, 1984. Contract negotiations began May 9, 1984. Few statements have been made by negotiators about the substance of the talks since they began. But it is expected that neither side will begin to bargain in earnest until the expiration of the current contract is imminent. In the meantime, large coal users, such as electric utilities and major manufacturers, continue to stockpile coal in anticipation of a strike.

The Division of Energy is monitoring the contract negotiations closely and is coordinating Ohio's preparations for a strike with representatives of the state's electric utilities, mine workers, coal producers, and large coal users. Periodic public statements concerning any significant developments will be released as October approaches.

To derive the Ohio Division of Energy projections, average daily requirements of coal were determined by dividing projected monthly coal consumption by the number of days in the month. End-of-month stocks were derived by considering consecutively end of June 1983 stocks, projected monthly coal delivery schedules as submitted by the utilities, and projected monthly coal consumption levels. Number of days' supply of coal was estimated on the basis of average daily requirements in subsequent months and the level of end-of-month stocks for the month in question.

Coal consumption projections were made through the use of a formula which adjusts coal consumption levels for changes in the consumption of oil, natural gas, and nuclear fuel in a manner that is consistent with the projected demand or net energy for load. In making these projections, it is assumed that the following conditions will be satisfied:

1. Monthly demand (net energy for load) for July 1984 through June 1985 will be realized in the manner projected by the utility companies.
2. Energy required to supply projected net energy for load in a given month from July 1984 through June 1985 will be proportional to the energy consumed in supplying the actual net energy for load in the previous twelve month period.
3. Monthly delivery schedules for all fuels in 1984 and 1985 will be met in the manner projected by the utility companies.
4. With the exception of Toledo Edison, all of the electricity required to meet the net energy for load projection will be generated by coal.

The end-of-month stock and burn-day projections indicate that, under normal burning conditions, all of the utilities will have at least 60 days supply of coal on October 1, 1984. Two utilities, Cincinnati Gas and Electric and Toledo Edison, are projected to fall below 60 days in November and December. As the date of expiration of the UMWA contract approaches, all of the stocks will be closely monitored. Utilities with low burn-days projections will be contacted to ascertain the adequacy of their supply.

Oil

Each electric utility forecasts an adequate supply of oil for the generation of electricity throughout the forecast period. The decline in oil usage in Ohio has resulted in net generation from oil of less than 1%

of total net generation. Currently oil is being used as a start-up fuel and in peaking units. Due to the currently high reserve margins for all utilities, the Division does not anticipate that the utilities will generate much electricity from peaking units and consequently our projections indicate that there will be an adequate supply of oil, under normal generating conditions.

If there is a prolonged coal strike, the utilities may wish to use more oil in order to conserve coal stocks. Oil is currently available on the spot market if such a need should arise. In the event that a strike occurs the Division will closely monitor the monthly oil stocks to ensure their adequacy.

TABLE 2. SOURCE OF COAL SUPPLY TO ELECTRIC UTILITIES
OHIO PORTION
1000 Short Tons

Month	1	2	3	4	6	7&8	9	Other	Total
1982									
January	0.0	128.4	23.9	2,019.3	222.7	1,097.7	103.7	200.2	3,795.9
February	0.0	123.0	19.4	2,137.4	388.2	1,187.4	51.2	191.7	4,098.3
March	0.0	173.4	27.9	2,303.4	382.9	1,505.2	56.7	237.9	4,687.4
April	0.0	136.9	37.3	2,031.0	237.3	1,457.9	109.8	168.8	4,179.0
May	0.0	109.5	40.3	1,554.9	200.8	1,058.5	28.6	150.8	3,143.4
June	0.7	121.7	31.0	1,976.6	170.0	1,090.1	97.3	134.0	3,620.7
July	0.0	139.0	12.5	1,537.3	126.3	590.8	76.4	131.8	2,614.1
August	0.0	134.7	4.3	1,998.6	317.3	1,299.2	79.6	178.7	4,012.4
September	0.0	139.2	36.4	1,982.4	285.8	1,094.8	67.5	184.8	3,790.9
October	0.0	173.4	7.1	1,879.1	346.1	859.7	77.6	64.4	3,407.4
November	0.0	205.9	33.1	1,973.1	306.1	1,202.3	118.2	58.2	3,896.9
December	0.0	136.0	42.3	1,770.8	297.8	1,106.2	100.2	161.4	3,614.7
Total	0.7	1,721.1	315.5	23,163.9	3,281.3	13,549.8	966.8	1,862.7	44,861.1
% of Total	.0	3.8	0.7	51.6	7.3	30.2	2.2	4.2	100.0
1983									
January	0.0	105.8	37.9	1,865.6	292.9	938.4	62.2	239.7	3,542.5
February	0.0	76.0	25.0	1,608.6	291.9	793.3	9.0	102.1	2,905.9
March	0.0	109.1	9.1	1,274.6	349.9	973.2	5.8	98.7	2,820.4
April	0.0	85.5	14.7	1,438.8	240.0	685.5	12.0	0.0	2,476.5
May	0.0	166.3	26.7	1,937.3	264.2	1,003.2	4.4	1.5	3,403.6
June	0.0	160.7	38.0	1,945.5	140.5	991.0	29.9	6.3	3,311.9
July	0.0	172.4	37.5	1,792.4	73.6	872.4	58.7	0.0	3,007.0
August	0.0	267.1	56.6	2,172.1	185.5	1,234.3	48.7	4.4	3,968.7
September	0.0	222.5	47.0	2,039.4	216.5	1,056.5	7.8	0.0	3,589.7
October	0.0	199.5	31.9	2,084.5	282.7	1,079.5	0.0	0.0	3,678.1
November	0.0	207.6	21.5	1,961.4	267.1	1,113.0	37.0	4.8	3,612.4
December	0.0	155.9	25.6	1,895.0	270.6	1,188.1	143.3	0.0	3,678.5
Total	0.0	1,928.4	371.5	22,015.2	2,875.4	11,928.4	418.8	457.5	39,995.2
% of Total	0.0	4.8	0.9	55.0	7.2	29.8	1.0	1.1	100.0
1984									
January	0.0	196.9	36.0	2,144.9	310.4	1,272.5	46.1	0.0	4,006.8
February	0.0	211.7	42.4	2,337.8	384.1	1,302.1	40.2	0.0	4,318.3
March	0.0	258.9	62.5	2,499.4	387.1	1,170.7	59.1	0.0	4,437.7
April	0.0	206.8	44.3	2,248.9	466.3	1,064.3	16.4	0.0	4,047.0

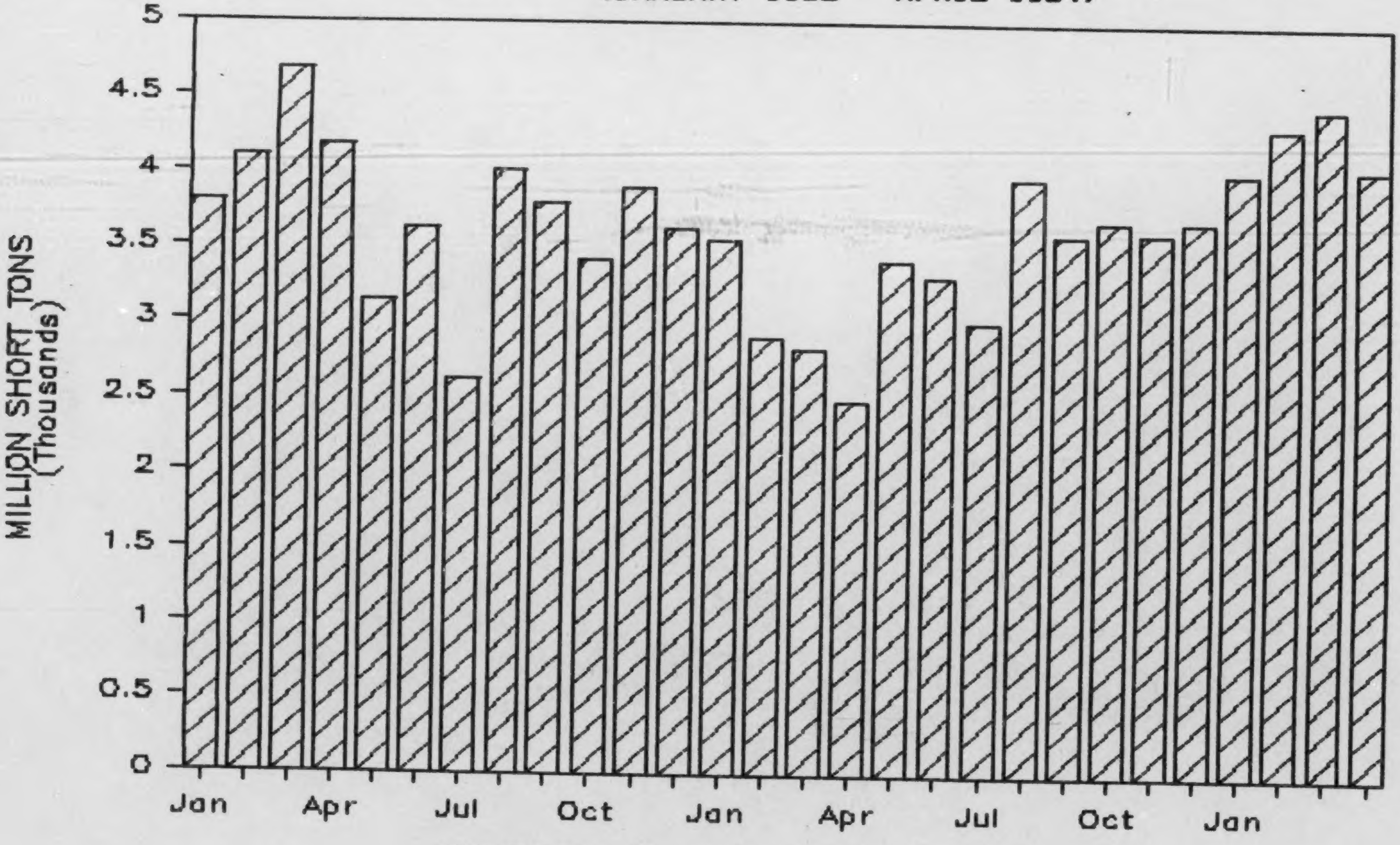
District

1. Eastern Pennsylvania
2. Western Pennsylvania
3. Northern West Virginia
4. Ohio
6. Panhandle (in West Virginia)
7. Southern No. 1 (in West Virginia and Virginia)
8. Southern No. 2 (in West Virginia and Eastern Kentucky)
9. Western Kentucky

Other - Primarily from Wyoming and Utah

Source: Form FPC 423

FIG. 2. MONTHLY COAL DELIVERIES TO POWER PLANTS IN OHIO
(JANUARY 1982 - APRIL 1984)



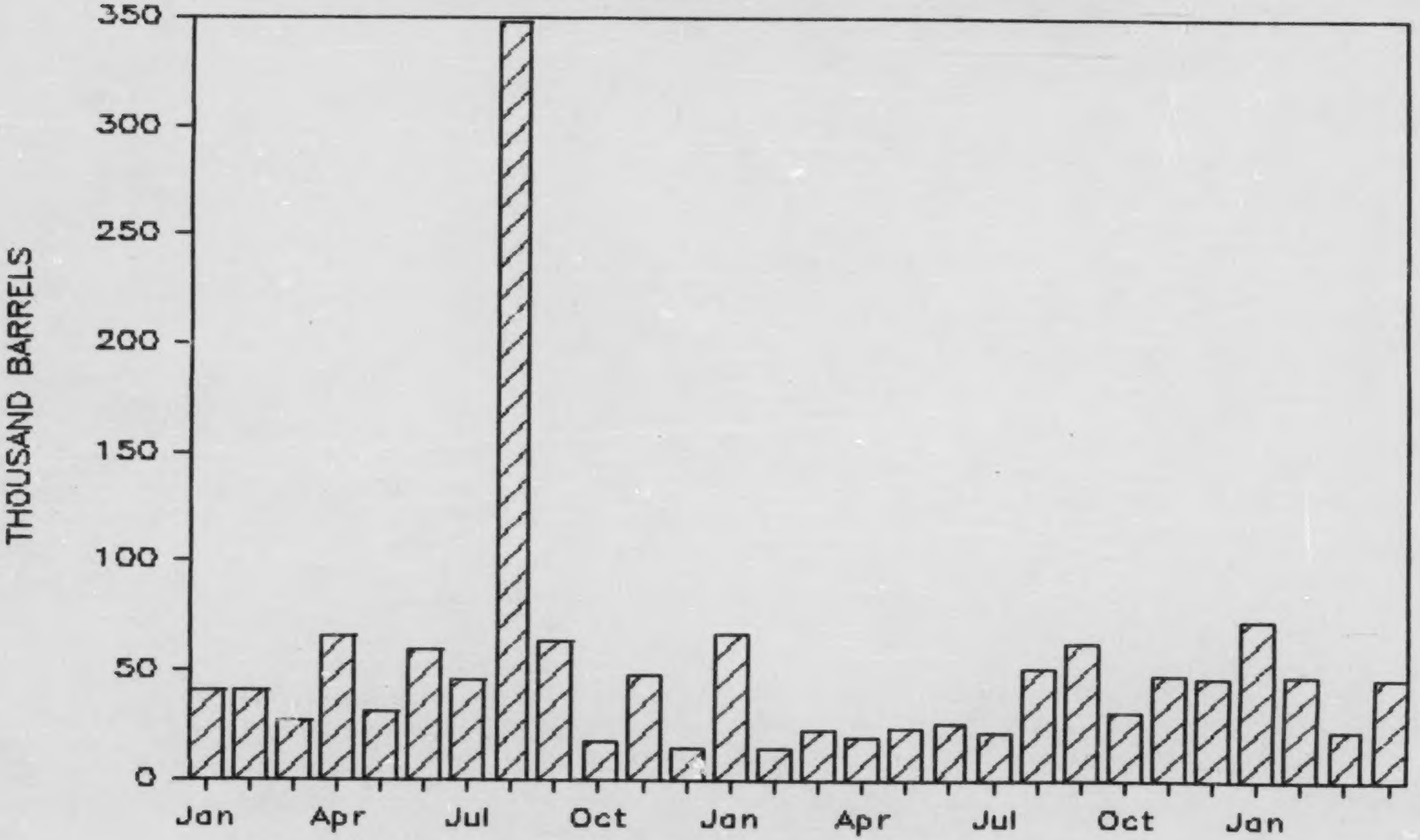
SOURCE: THE OHIO DIVISION OF ENERGY

Table 3. Major Oil Suppliers to Electric Utilities
Ohio Portion
(Thousand Barrels)

1982	Allied	Marathon	Standard	Union	Other	Total
January	35.9	0.2	2.8	1.8	0.0	40.7
Feburary	34.7	0.2	2.3	2.9	0.0	40.1
March	21.8	0.0	3.4	1.5	0.0	26.7
April	62.8	0.0	1.8	0.9	0.0	65.5
May	26.8	0.0	2.3	2.2	0.0	31.3
June	50.6	0.0	6.5	1.8	0.0	58.9
July	35.7	0.2	7.9	2.3	0.0	46.1
August	140.2	0.0	204.6	2.8	0.0	347.6
September	58.5	0.6	3.4	1.2	0.0	63.7
October	13.5	0.0	2.5	1.7	0.0	17.7
November	42.2	0.0	2.5	3.0	0.0	47.7
December	9.4	0.0	1.9	2.8	0.0	14.1
Total	532.1	1.2	241.9	24.9	0.0	800.1
% of Total	66.5	0.1	30.2	3.1	0.0	100.0
1983						
January	36.5	18.1	9.1	3.0	0.0	66.7
Feburary	7.3	0.2	5.2	2.0	0.0	14.7
March	7.0	0.6	11.1	2.0	2.0	22.7
April	6.8	0.2	9.5	2.0	1.0	19.5
May	9.2	0.4	8.5	4.0	2.1	24.2
June	10.9	0.0	11.0	4.0	0.0	25.9
July	11.5	0.2	6.7	3.0	0.0	21.4
August	38.8	0.4	4.0	3.0	5.2	51.4
September	52.4	0.2	5.1	0.0	4.9	62.6
October	14.0	0.4	14.6	1.0	1.7	31.7
November	35.7	0.2	6.1	3.0	2.6	47.6
December	18.4	0.0	16.2	2.0	10.5	47.1
Total	508.6	20.9	90.9	27.0	19.5	666.9
% of Total	76.3	3.1	13.6	4.0	2.9	100.0
1984						
January	66.0	0.2	2.4	3.0	2.0	73.6
February	38.9	0.4	2.8	1.0	5.2	48.3
March	12.8	0.4	4.5	2.0	2.7	22.4
April	40.6	3.3	0.0	0.0	2.9	46.8

Source: Form FPC 4 and the Ohio Division of Energy

FIG. 3. MONTHLY OIL DELIVERIES TO POWER PLANTS IN OHIO
(JANUARY 1982 - APRIL 1984)



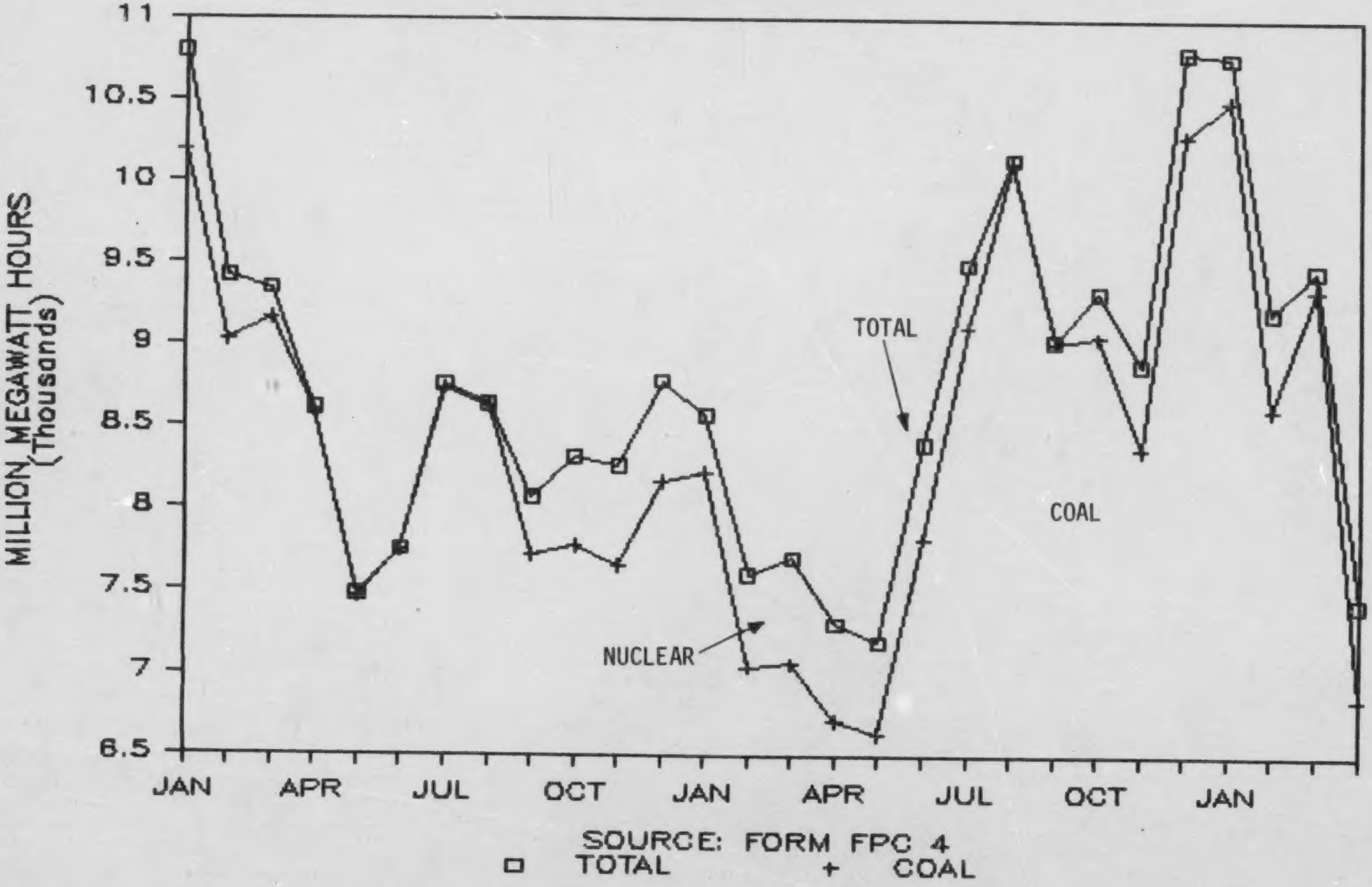
SOURCE: THE OHIO DIVISION OF ENERGY

Table 4. Major Ohio Utilities - Net Generation by Types of Fuel (Ohio Portion) (Thousand MWH)

1982	COAL	OIL	GAS	NUCLEAR	TOTAL
January	10194	27	3	576	10800
February	9026	6	2	386	9420
March	9170	8	3	165	9346
April	8593	14	3	0	8610
May	7464	13	3	0	7480
June	7750	6	0	0	7756
July	8741	11	5	0	8757
August	8627	12	3	0	8642
September	7726	8	1	343	8078
October	7778	2	1	537	8318
November	7653	2	0	604	8259
December	8165	0	0	615	8780
Total	100887	109	24	3226	104246
% of Total	96.78	0.10	0.02	3.09	100.00
1983					
January	8219	-3	1	357	8574
February	7041	-1	0	560	7600
March	7055	1	1	647	7704
April	6716	8	1	574	7299
May	6630	4	-9	567	7192
June	7822	7	2	567	8398
July	9114	9	4	370	9497
August	10124	16	3	0	10143
September	9023	5	1	0	9029
October	9054	5	1	271	9331
November	8368	6	4	506	8884
December	10290	14	4	487	10795
Total	99456	71	13	4906	104446
% of Total	95.22	0.07	0.01	4.70	100.00
1984					
January	10503	9	4	249	10765
February	8608	2	0	596	9206
March	9344	4	2	111	9461
April	6847	4	1	579	7431

Source: Form FPC 4 and the Ohio Division of Energy

FIG. 4. NET GENERATION BY TYPE OF FUEL,
OHIO PORTION OF MAJOR OHIO ELECTRIC UTILITIES
(JANUARY 1982 - APRIL 1984)



SOURCE: FORM FPC 4

Table 5. Major Ohio Utilities
Fuel Consumption and Stocks
(Ohio Portion)

	Coal (Thousand Tons)		Oil (Thousand 42-Gal. Bbls.)		Gas (MMCF)
1982	Burned	In Stock	Burned	In Stock	Burned
January	4,629.5	9,351.6	147.9	735.8	119.0
February	4,334.6	9,241.2	71.1	721.3	59.0
March	4,072.6	9,866.8	67.0	723.1	68.0
April	3,832.1	10,153.7	74.1	762.0	73.0
May	3,191.5	10,304.0	75.0	698.4	38.0
June	3,412.2	10,762.3	78.7	733.2	23.0
July	4,023.2	9,239.8	61.8	755.0	25.0
August	3,880.1	9,147.0	74.2	716.6	85.0
September	3,494.3	9,630.0	51.9	779.2	35.4
October	3,453.1	9,814.9	55.7	744.3	34.0
November	3,271.3	9,563.6	72.1	1,456.5	35.4
December	3,591.4	10,082.9	36.5	1,074.5	24.7
Total	45,185.9	117,157.8	866.0	9,899.9	619.5
Avg/Month	3,765.5	9,763.2	72.2	825.0	51.6
1983					
January	3,582.2	9,807.8	51.1	1,470.5	45.5
February	3,068.6	9,694.0	43.5	1,468.1	17.0
March	3,076.2	9,378.9	39.7	1,468.5	42.5
April	2,920.4	9,649.2	48.8	624.9	39.6
May	2,851.0	10,308.8	52.9	410.6	25.6
June	3,347.7	10,363.6	45.3	386.0	68.6
July	3,953.3	9,440.7	57.7	378.4	86.5
August	4,416.1	9,038.8	64.0	365.0	76.5
September	3,902.5	8,567.9	38.2	324.8	22.8
October	3,934.2	8,458.8	41.0	385.0	33.0
November	3,623.0	8,502.4	48.9	408.6	75.8
December	4,561.6	7,487.1	75.3	326.3	81.8
Total	43,236.8	110,698.0	606.4	8,016.7	615.2
Avg/Month	3,603.1	9,224.8	50.5	668.1	51.3
1984					
January	4,635.1	6,913.0	58.3	396.7	76.0
February	3,756.3	7,364.0	54.3	390.5	14.0
March	4,113.5	7,793.7	16.6	397.7	56.1
April	2,977.2	8,445.0	34.8	388.6	44.7

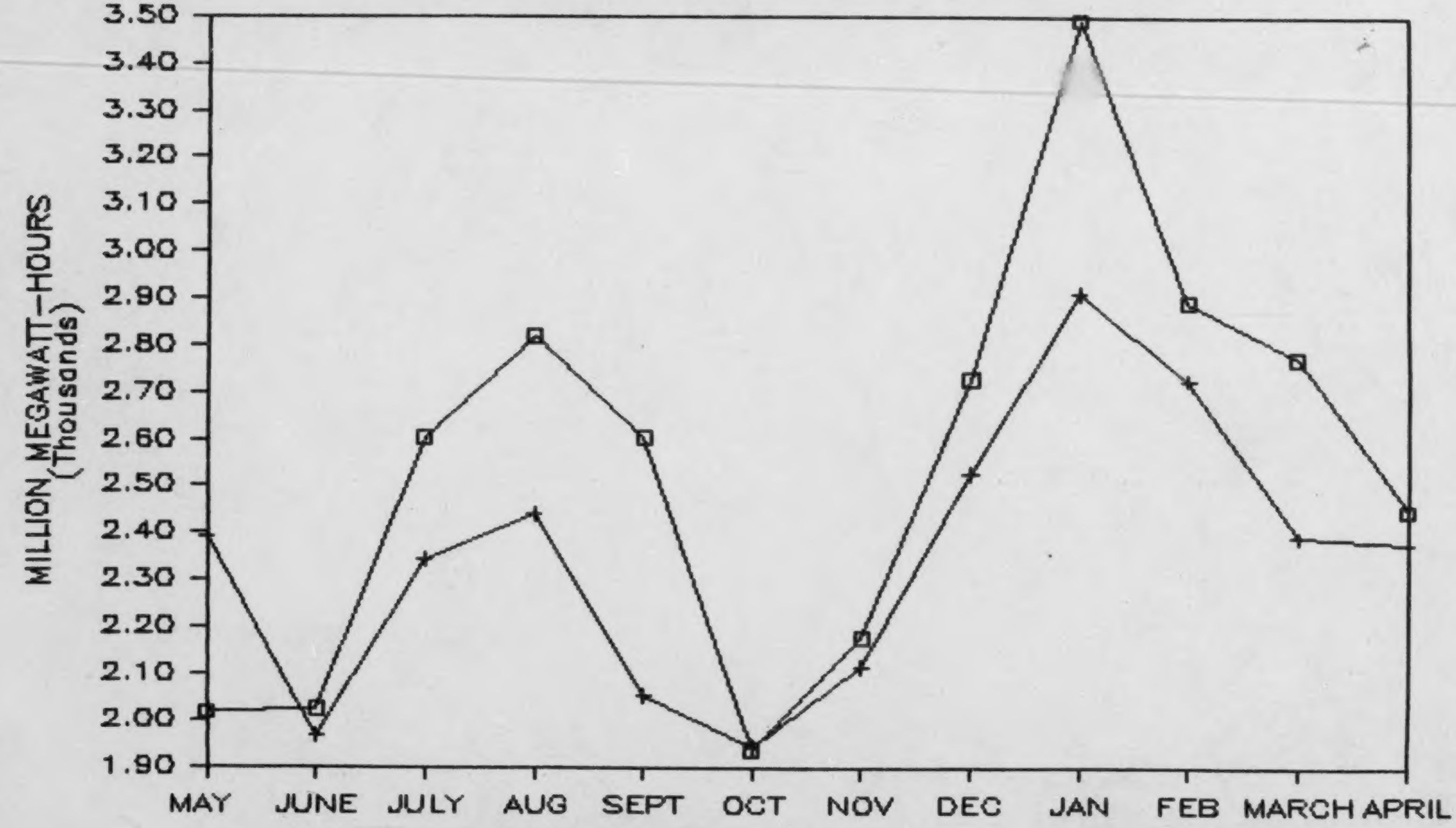
Source: Form FPC 4 and the Ohio Division of Energy

Table 6. Ohio Electricity Consumption
May 1982 - April 1984
(Thousand MWH)

	May	June	July	August	September	October	November	December	January	February	March	April	Total
Residential													
1983-84	2016.9	2023.7	2603.0	2817.6	2604.2	1935.6	2177.7	2727.2	3491.7	2890.9	2771.2	2448.2	30507.9
1982-83	2392.7	1964.8	2345.8	2440.8	2052.2	1943.4	2113.9	2527.4	2909.8	2725.6	2390.5	2378.3	28185.2
% Change	-15.7	3.0	11.0	15.4	26.9	-0.4	3.0	7.9	20.0	6.1	15.9	2.9	8.2
Commercial													
1983-84	1604.0	1758.9	2047.1	2125.4	2060.0	1716.0	1677.7	1850.2	2048.1	1901.8	1889.0	1711.5	22389.7
1982-83	1632.7	1770.5	1925.7	1946.0	1805.8	1673.0	1624.5	1743.6	1838.6	1778.8	1739.6	1661.4	21140.2
% Change	-1.8	-0.7	6.3	9.2	14.1	2.6	3.3	6.1	11.4	6.9	8.6	3.0	5.9
Industrial													
1983-84	3342.5	3374.8	3280.9	3542.1	3616.3	3606.7	3554.0	3446.8	3707.8	3718.9	4020.3	3927.2	43138.3
1982-83	3217.5	3295.3	3075.7	3196.4	3107.5	3014.8	2910.7	2779.2	2921.2	3102.7	3301.5	3201.3	37123.8
% Change	3.9	2.4	6.7	10.8	16.4	19.6	22.1	24.0	26.9	19.9	21.8	22.7	16.2
Other													
1983-84	386.0	404.8	410.2	437.6	432.0	412.5	444.3	480.8	497.7	425.7	424.1	380.5	5136.2
1982-83	408.8	423.5	399.1	396.7	395.0	424.7	441.4	469.2	487.2	451.5	450.6	399.4	5147.1
% Change	-5.6	-4.4	2.8	10.3	9.4	-2.9	0.7	2.5	2.2	-5.7	-5.9	-4.7	-0.2
Total													
1983-84	7349.4	7562.2	8341.2	8922.7	8712.5	7670.8	7853.7	8505.0	9745.3	8937.3	9104.6	8467.4	101172.1
1982-83	7651.7	7454.1	7746.3	7979.9	7360.5	7055.9	7090.5	7519.4	8156.8	8058.6	7882.2	7640.4	91596.3
% Change	-4.0	1.5	7.7	11.8	18.4	8.7	10.8	13.1	19.5	10.9	15.5	10.8	10.5
Customers (1000's)													
Residential	3473.4	3469.5	3466.7	3467.6	3469.2	3474.3	3478.3	3485.3	3490.2	3493.5	3496.1	3496.2	41760.1
Commercial	355.0	356.1	356.1	356.2	356.3	356.6	355.5	355.7	356.4	356.1	355.7	356.2	4272.0
Industrial	24.8	24.8	24.7	24.7	24.8	24.8	25.0	25.1	25.2	25.4	25.5	25.8	300.6
Total	3853.2	3850.3	3847.6	3848.6	3850.3	3855.7	3858.8	3866.1	3871.8	3875.0	3877.3	3878.1	46332.8

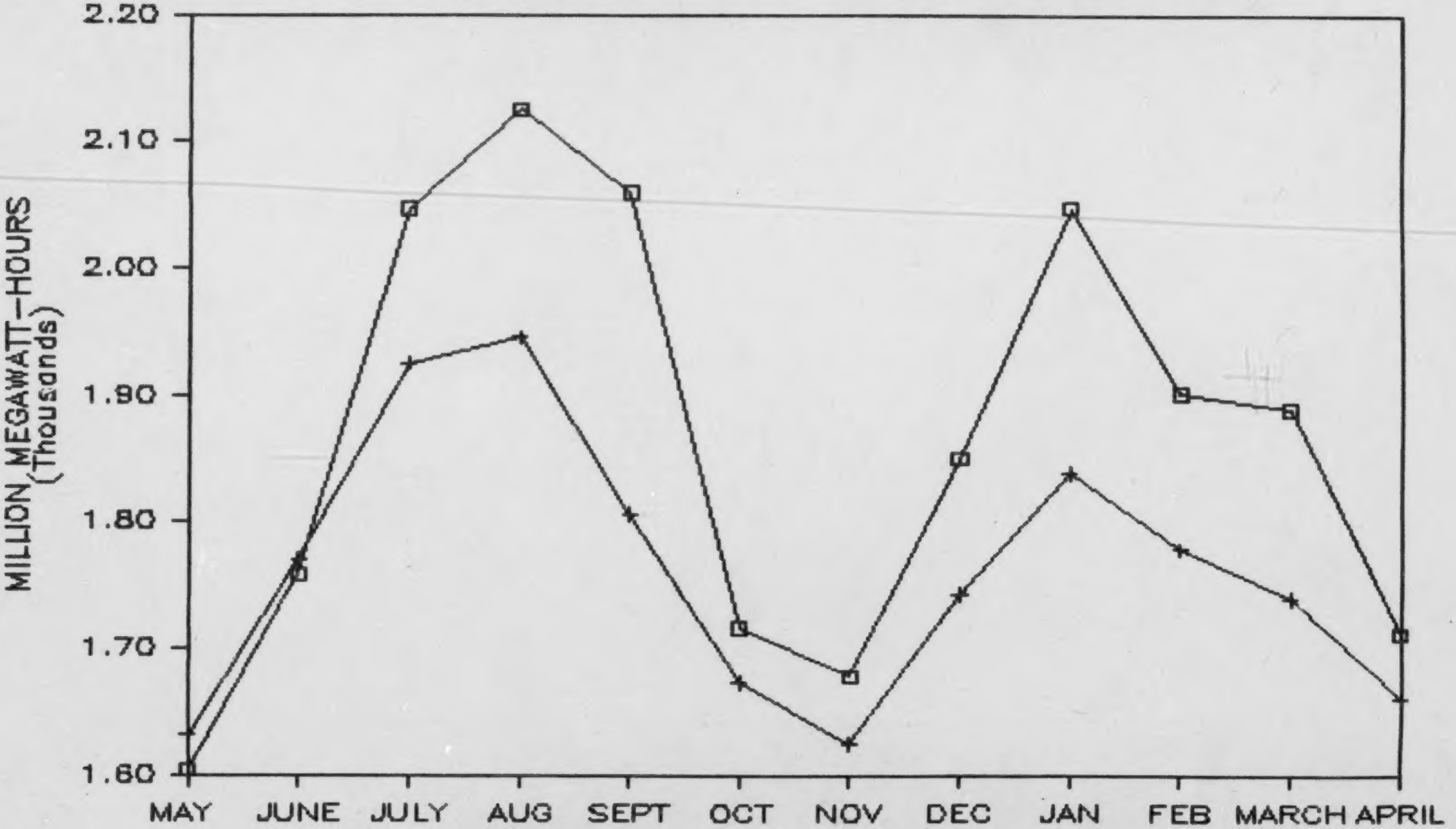
Source: The Ohio Electric Utility Institute: Monthly Summaries

FIG. 5A. OHIO RESIDENTIAL SECTOR ELECTRICITY CONSUMPTION
(1982 - 1983 VS. 1983 - 1984)



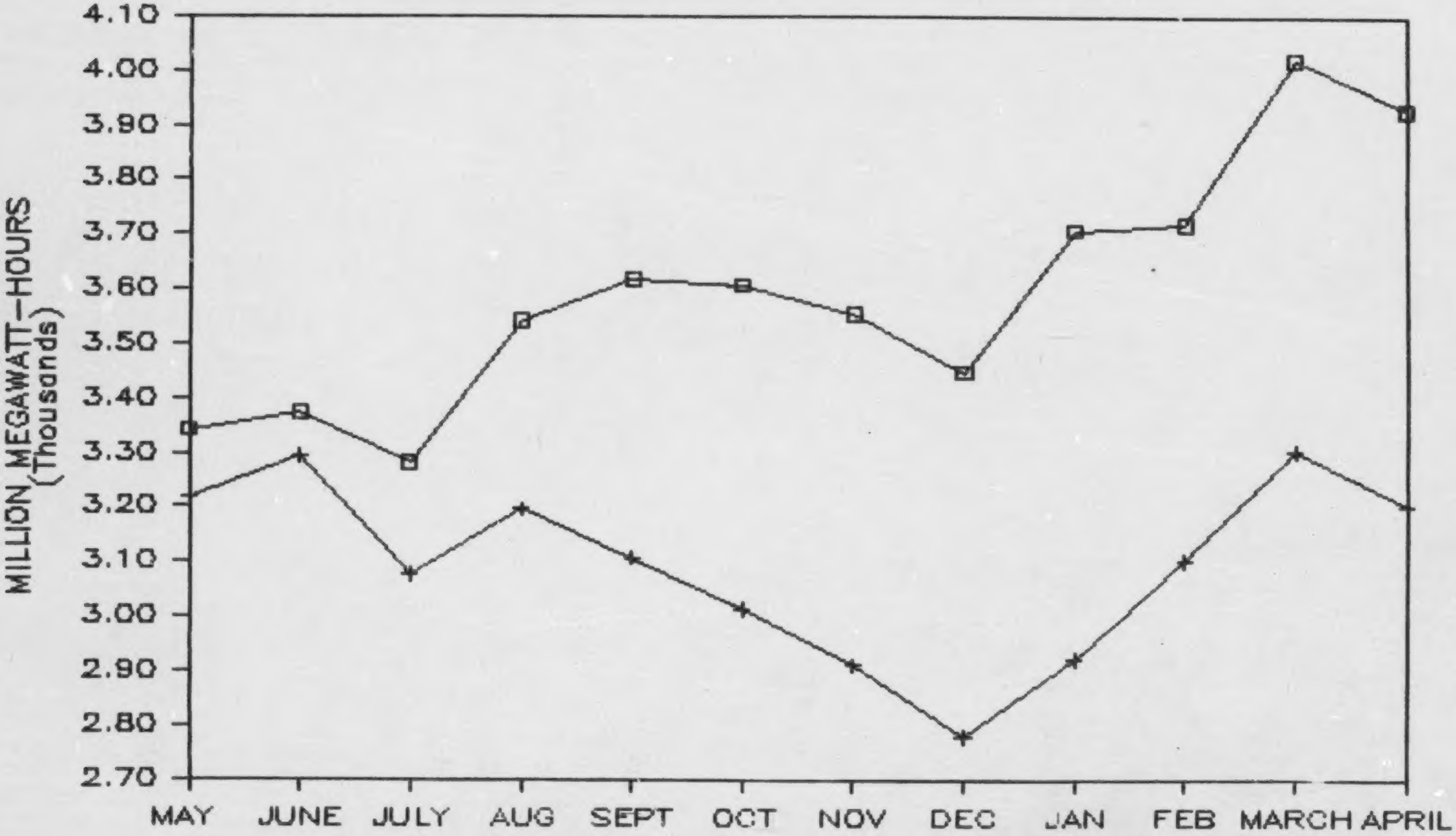
Source: The Ohio Electric Utility Institute: Monthly Summaries
□ 1983—1984 + 1982—1983

FIG. 5B. OHIO COMMERCIAL SECTOR ELECTRICITY CONSUMPTION
(1982 - 1983 VS. 1983 - 1984)



Source: The Ohio Electric Utility Institute: Monthly Summaries

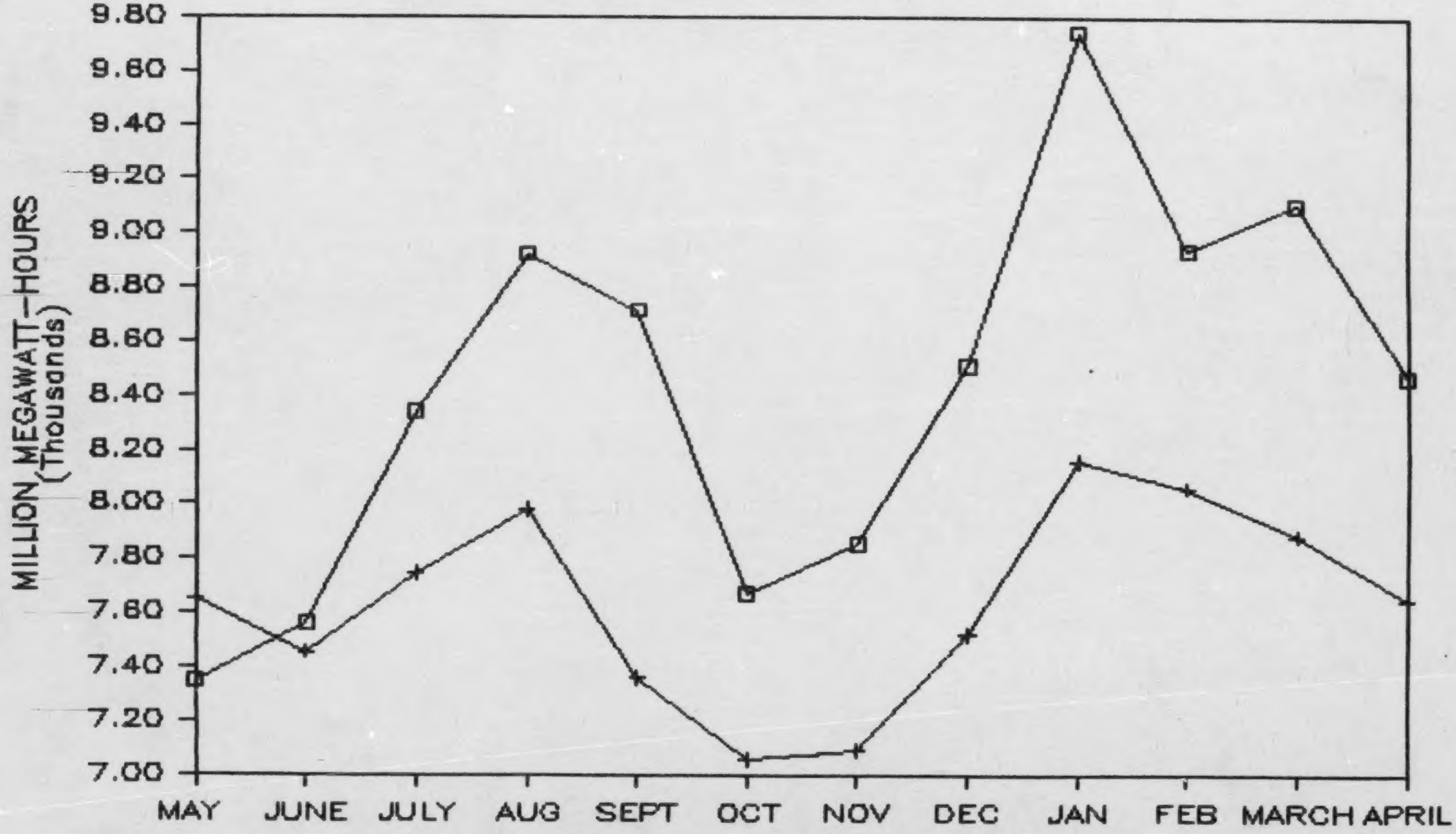
FIG. 5C. OHIO INDUSTRIAL SECTOR ELECTRICITY CONSUMPTION
(1982 - 1983 VS. 1983 - 1984)



Source: The Ohio Electric Utility Institute: Monthly Summaries

□ 1983—1984 + 1982—1983

FIG 5D. TOTAL OHIO ELECTRICITY CONSUMPTION
(1982 - 1983 VS. 1983 - 1984)



Source: The Ohio Electric Utility Institute: Monthly Summaries

□ 1983–1984 + 1982–1983

Table 7-A. Ohio Electric Utilities' Projected Deliveries, Consumption, and Stocks of Coal for Electricity Generation, 1984-1985, (1000 Short Tons)

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Allegheny Power System													
Deliveries	1,549	1,888	1,616	50	50	1,843	1,366	1,366	1,351	1,348	1,348	1,313	15,087
Consumption	1,259	1,344	1,150	1,273	1,278	1,420	1,416	1,255	1,304	1,274	1,206	1,185	15,366
Stocks	3,928	4,472	4,937	3,714	2,486	2,908	2,858	2,969	3,016	3,090	3,232	3,360	
American Electric Power													
Deliveries	3,679	4,418	3,816	2,244	2,177	2,790	3,901	3,872	3,870	3,790	3,805	3,506	41,868
Consumption	3,354	3,456	3,123	2,881	3,033	3,577	3,946	3,705	3,912	3,362	33,380	3,487	71,216
Stocks	11,413	12,375	13,068	12,431	11,575	10,788	10,743	10,910	10,868	11,296	11,763	11,782	
Buckeye Power Inc.													
Deliveries	168	225	200	148	116	119	155	152	153	153	155	135	1,879
Consumption	108	147	166	143	167	171	174	118	131	170	172	126	1,793
Stocks	414	492	526	531	480	428	409	443	465	448	431	440	
Cincinnati Gas & Electric													
Deliveries	609	641	791	80	80	60	600	600	700	700	700	650	6,111
Consumption	537	570	525	483	476	573	588	520	587	515	462	559	6,395
Stocks	1,320	1,391	1,658	1,255	859	346	358	438	551	736	974	1,065	
Cleveland Electric Illuminating													
Deliveries	665	746	597	232	199	478	519	424	437	403	491	504	5,695
Consumption	494	585	547	533	449	478	519	424	437	386	424	434	5,710
Stocks	1,471	1,632	1,632	1,381	1,131	1,131	1,131	1,131	1,131	1,140	1,215	1,285	
Dayton Power and Light													
Deliveries	646	635	511	360	364	383	779	733	631	580	665	637	6,924
Consumption	632	621	496	572	641	661	763	711	613	556	642	615	7,522
Stocks	1,256	1,271	1,285	1,073	797	520	537	559	577	601	623	645	
Ohio Edison													
Deliveries	1,056	1,036	961	855	852	951	1,099	896	893	855	870	903	11,227
Consumption	967	996	895	992	1,009	1,111	1,145	954	927	930	910	979	11,816
Stocks	2,723	2,763	2,829	2,692	2,535	2,375	2,329	2,270	2,236	2,160	2,120	2,044	
Ohio Valley Electric Corp.													
Deliveries	685	687	640	351	382	396	572	524	574	546	590	595	6,542
Consumption	620	622	575	556	587	601	572	524	574	546	590	595	6,962
Stocks	1,715	1,780	1,845	1,640	1,435	1,230	1,230	1,230	1,230	1,230	1,230	1,230	
Toledo Edison													
Deliveries	154	190	195	162	89	194	188	183	171	149	143	154	1,972
Consumption	139	164	215	240	199	171	188	183	171	149	143	154	2,116
Stocks	413	438	418	340	230	252	320	320	320	320	320	320	

NOTE: NUMBERS MAY NOT SUM TO TOTAL DUE TO INDEPENDENT ROUNDING

Source: ODOE Form SE-3A.

Table 7-B. Ohio Electric Utilities' Projected Deliveries, Consumption, and Stocks of Oil for Electricity Consumption, 1984-1985 (1000 Bbls.)

	July	August	September	October	November	December	January	February	March	April	May	June	Total
Allegheny Power System													
Deliveries	0	0	0	0	0	0	0	0	0	0	0	0	0
Consumption	0	0	0	0	0	0	0	0	0	0	0	0	0
Stocks	167	167	167	167	167	167	167	167	167	167	167	167	
American Electric Power System													
Deliveries	43	41	56	46	44	49	47	42	43	36	43	47	537
Consumption	43	41	56	46	44	49	47	42	43	36	43	47	537
Stocks	267	267	267	267	267	267	267	267	267	267	267	267	
Buckeye Power System													
Deliveries	2	2	2	2	2	2	2	2	2	2	2	2	19
Consumption	2	2	2	2	2	2	2	2	2	2	2	2	19
Stocks	11	11	11	11	11	11	11	11	11	11	11	11	
Cincinnati Gas and Electric													
Deliveries	8	16	8	16	16	16	8	16	16	8	8	8	144
Consumption	12	13	8	16	10	14	9	10	17	11	7	14	140
Stocks	71	74	74	74	80	82	81	87	86	84	85	79	
Cleveland Electric Illuminating													
Deliveries	9	33	21	6	27	15	6	5	7	9	20	2	158
Consumption	9	33	21	6	27	15	6	5	7	9	20	2	158
Stocks	182	182	182	182	182	182	182	182	182	182	182	182	
Dayton Power and Light													
Deliveries	1	1	34	1	1	1	0	0	67	0	0	0	106
Consumption	8	5	6	6	9	10	18	17	11	7	4	6	106
Stocks	386	382	410	405	397	388	370	354	410	403	399	393	
Ohio Edison													
Deliveries	1	1	1	2	2	3	1	2	1	0	1	0	16
Consumption	1	1	1	2	2	3	1	2	1	0	1	0	16
Stocks	39	39	39	39	39	39	39	39	39	39	39	39	
Ohio Valley Electric Corp.													
Deliveries	2	2	2	2	2	2	2	2	2	2	2	2	20
Consumption	2	2	2	2	2	2	2	2	2	2	2	2	20
Stocks	6	6	6	6	6	6	6	6	6	6	6	6	
Toledo Edison													
Deliveries	125	123	123	141	116	132	260	227	176	206	182	163	1,974
Consumption	125	123	125	142	116	136	260	227	176	206	182	163	1,981
Stocks	528	527	526	525	525	520	510	510	510	510	510	510	

Source: ODOE Form SE-3A.

TABLE 7-C Electric Utilities' Demand Forecast Fuel Assessment, and Inventory Model
(July 1984 - June 1985)

ALLEGHENY POWER SYSTEM

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
DEMAND FORECAST (GWH)	2609.4	2692.3	2509.8	2664.9	2694.1	2990.8	3347.7	2873.7	2905.3	2595.7	2644.9	2621.6	33150.2
EST DEMAND GEN BY COAL	2609.4	2692.3	2509.8	2664.9	2694.1	2990.8	3347.7	2873.7	2905.3	2595.7	2644.9	2621.6	33150.2
PROJ DAILY CONSUMPTION COAL (KTONS)	38.72	39.95	38.48	39.54	41.31	44.38	49.68	45.58	43.11	39.80	39.25	40.20	
COAL DELIVERIES (KTONS)	1548.7	1888.1	1616.0	50.0	50.0	1842.8	1365.7	1365.7	1350.7	1348.2	1348.2	1313.2	15087.1
END OF MONTH STOCK COAL (KTONS)	3987.	4636.	5098.	3922.	2733.	3200.	3025.	3069.	3083.	3237.	3369.	3476.	
NUMBER OF DAYS SUPPLY COAL	101.	114.	117.	87.	58.	68.	69.	75.	78.	81.	84.	86.	

AMERICAN ELECTRIC POWER SYSTEM

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
DEMAND FORECAST (GWH)	7089.0	7287.0	6678.0	6930.0	7230.0	7958.0	8741.0	7982.0	7816.0	6917.0	6788.0	6893.0	88308.9
EST DEMAND GEN BY COAL	7089.0	7287.0	6678.0	6930.0	7230.0	7958.0	8741.0	7982.0	7816.0	6917.0	6788.0	6893.0	88308.9
PROJ DAILY CONSUMPTION COAL (KTONS)	106.56	109.54	103.73	104.17	112.31	119.63	131.40	128.26	117.49	107.44	102.04	107.07	
COAL DELIVERIES (KTONS)	3679.0	4418.0	3816.0	2244.0	2177.0	2790.0	3901.0	3872.0	3870.0	3790.0	3805.0	3506.0	41868.0
END OF MONTH STOCK COAL (KTONS)	11464.	12486.	13190.	12204.	11012.	10094.	9922.	10074.	10302.	10868.	11510.	11804.	
NUMBER OF DAYS SUPPLY COAL	107.	114.	114.	100.	87.	80.	84.	92.	98.	103.	108.	110.	

TABLE 7-C Electric Utilities' Demand Forecast Fuel Assessment, and Inventory Model
(July 1984 - June 1985)

CINCINNATI GAS & ELECTRIC

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
DEMAND FORECAST (GWH)	1450.9	1475.5	1236.2	1183.9	1235.5	1380.4	1464.6	1312.3	1337.8	1154.0	1251.5	1392.4	15874.
EST DEMAND GEN BY COAL	1450.9	1475.5	1236.2	1183.9	1235.5	1380.4	1464.6	1312.3	1337.8	1154.0	1251.5	1392.4	15874.
PROJ DAILY CONSUMPTION COAL (KTONS)	18.67	18.99	16.44	15.24	16.43	17.77	18.85	18.06	17.22	15.35	16.11	18.52	
COAL DELIVERIES (KTONS)	608.9	641.2	791.4	80.0	80.0	60.0	600.0	600.0	700.0	700.0	700.0	650.0	6211.
END OF MONTH STOCK COAL (KTONS)	1278.	1331.	1629.	1236.	823.	333.	348.	425.	591.	830.	1031.	1126.	
NUMBER OF DAYS SUPPLY COAL	74.	83.	98.	71.	45.	18.	19.	25.	38.	49.	56.	61.	

CLEVELAND ELECTRIC ILLUMINATING COMPANY

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
DEMAND FORECAST (GWH)	1613.0	1625.0	1497.0	1535.0	1496.0	1598.0	1722.0	1516.0	1632.0	1481.0	1544.0	1537.0	18796.
EST DEMAND GEN BY COAL	1613.0	1625.0	1497.0	1535.0	1496.0	1598.0	1722.0	1516.0	1632.0	1481.0	1544.0	1537.0	18796.
PROJ DAILY CONSUMPTION COAL (KTONS)	15.61	15.73	14.97	14.85	14.96	15.46	16.66	15.68	15.79	14.81	14.94	15.37	
COAL DELIVERIES (KTONS)	664.9	746.2	596.8	232.3	198.7	477.5	519.4	423.9	436.9	403.2	491.1	503.9	5694.
END OF MONTH STOCK COAL (KTONS)	1481.	1740.	1888.	1660.	1409.	1408.	1410.	1379.	1327.	1286.	1314.	1356.	
NUMBER OF DAYS SUPPLY COAL	98.	116.	122.	106.	88.	88.	91.	91.	88.	85.	85.	88.	

TABLE 7-C Electric Utilities' Demand Forecast Fuel Assessment, and Inventory Model (July 1984 - June 1985)

DAYTON POWER & LIGHT

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
DEMAND FORECAST (GWH)	981.3	953.3	869.2	914.0	914.0	1028.3	1160.6	1031.6	1031.6	893.5	893.5	920.6	11591.
EST DEMAND GEN BY COAL	981.3	953.3	869.2	914.0	914.0	1028.3	1160.6	1031.6	1031.6	893.5	893.5	920.6	11591.
PROJ DAILY CONSUMPTION COAL (KTONS)	14.49	14.08	13.26	13.50	13.95	15.19	17.14	16.29	15.23	13.64	13.20	14.05	
COAL DELIVERIES (KTONS)	646.0	635.0	511.0	360.0	364.0	383.0	779.0	733.0	631.0	580.0	665.0	637.0	6924.
END OF MONTH STOCK COAL (KTONS)	1439.	1637.	1750.	1692.	1638.	1550.	1797.	2058.	2217.	2388.	2644.	2859.	
NUMBER OF DAYS SUPPLY COAL	105.	118.	118.	109.	102.	96.	123.	147.	161.	172.	188.	204.	

OHIO EDISON SYSTEM

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
DEMAND FORECAST (GWH)	2085.2	2138.7	1859.3	2002.3	1943.5	2104.0	2264.9	2054.6	2092.3	1879.5	1869.9	1935.9	24230.
EST DEMAND GEN BY COAL	2085.2	2138.7	1859.3	2002.3	1943.5	2104.0	2264.9	2054.6	2092.3	1879.5	1869.9	1935.9	24230.
PROJ DAILY CONSUMPTION COAL (KTONS)	32.83	33.67	30.24	31.52	31.61	33.12	35.65	34.57	32.94	30.57	29.44	31.49	
COAL DELIVERIES (KTONS)	1056.3	1036.5	960.6	855.2	852.2	951.0	1099.0	895.7	892.9	854.7	870.0	903.4	11227.
END OF MONTH STOCK COAL (KTONS)	2672.	2664.	2718.	2596.	2500.	2424.	2418.	2311.	2182.	2120.	2077.	2036.	
NUMBER OF DAYS SUPPLY COAL	84.	86.	85.	78.	73.	70.	73.	74.	72.	69.	66.	65.	

TABLE 7-C Electric Utilities' Demand Forecast Fuel Assessment, and Inventory Model
(July 1984 - June 1985)

OHIO VALLEY ELECTRIC CORPORATION

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
DEMAND FORECAST (GWH)	1419.9	1419.9	1319.1	1304.7	1395.0	1429.8	1369.6	1248.7	1375.0	1299.4	1387.3	1390.9	16359.3
EST DEMAND GEN BY COAL	1419.9	1419.9	1319.1	1304.7	1395.0	1429.8	1369.6	1248.7	1375.0	1299.4	1387.3	1390.9	16359.3
PROJ DAILY CONSUMPTION COAL (KTONS)	19.24	19.24	18.47	17.68	19.53	19.37	18.56	18.08	18.63	18.19	18.80	19.47	
COAL DELIVERIES (KTONS)	685.0	687.0	640.0	351.0	382.0	396.0	572.0	524.0	574.0	546.0	590.0	595.0	6542.0
END OF MONTH STOCK COAL (KTONS)	1739.	1829.	1915.	1718.	1514.	1310.	1307.	1306.	1303.	1303.	1310.	1321.	
NUMBER OF DAYS SUPPLY COAL	94.	98	102.	90.	81.	71.	71.	71.	70.	68.	67.	68.	

TOLEDO EDISON

	JULY	AUG	SEPT	OCT	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	TOTAL
DEMAND FORECAST (GWH)	674.6	706.6	604.7	648.6	626.2	666.1	771.5	734.2	724.7	637.3	615.9	641.6	8052.
EST DEMAND GEN BY COAL	383.2	452.9	604.7	648.6	530.4	427.6	532.3	518.3	485.5	406.0	376.9	413.2	5779.
EST DEMAND GEN BY NUC	291.4	253.7	0.0	0.0	95.8	238.5	239.2	215.9	239.2	231.3	239.0	228.4	2272.
PROJ DAILY CONSUMPTION COAL (KTONS)	4.52	5.35	7.38	7.66	6.47	5.05	6.28	6.54	5.73	4.95	4.45	5.04	
COAL DELIVERIES (KTONS)	154.0	190.0	195.0	162.0	89.0	194.0	188.0	183.0	171.0	149.0	143.0	154.0	1972.
END OF MONTH STOCK COAL (KTONS)	427.	451.	425.	349.	244.	282.	275.	268.	261.	262.	267.	270.	
NUMBER OF DAYS SUPPLY COAL	66.	60.	60.	61.	45.	44.	44.	49.	55.	56.	53.	53.	

III. NATURAL GAS

Natural gas distribution companies operating in Ohio are classified into two categories with respect to their reporting requirements. Eight major companies, Cincinnati Gas and Electric, Columbia Gas of Ohio, Dayton Power and Light, East Ohio Gas, National Gas and Oil, Ohio Gas, River Gas, and West Ohio Gas, report to ODOE every month. Eighteen small utilities and two municipal utilities report twice a year. This section is based upon the most recent reports of these utilities.

Distribution and Supplies

Distribution: Service shares of the gas distribution companies operating in Ohio are presented in Table 8 for the annual period May 1983 to April 1984. During this period, the four large distribution companies--Cincinnati Gas and Electric, Columbia Gas of Ohio, Dayton Power and Light, and East Ohio Gas--jointly distributed 93.55 percent of the reported natural gas requirements of the state. The four intermediate-sized companies--National Gas and Oil, Ohio Gas, River Gas, and West Ohio Gas--distributed an additional 4.76 percent. The remaining 1.69 percent of the reported natural gas requirements were distributed by 18 small utilities and two municipal utilities. The figures presented in Table 8 do not include self-help natural gas, which is gas directly procured by industrial customers for their own use. Total requirements of 874,135 MMCF reported in Table 8 represent an increase of approximately 20 percent in the distribution of natural gas compared to the same period last year. The magnitude of the increase is explained primarily by the economic recovery in the second half of 1983, and the very mild 1982-83 heating season which was responsible for an unusually low consumption level in the base period of comparison. The behavior of monthly sectoral requirements between May 1983 and April 1984 versus the preceding annual period are comparatively presented in figures 7-A through 7-D.

Sources of Supply: The major sources of natural gas supplies to the state of Ohio are presented in Table 9, and the quantities supplied are shown graphically in Figure 6. From May 1983 through April 1984, the eight major gas distribution companies of Ohio, which together account for 98.31 percent of the reported natural gas distribution in the state, procured 793,313 MMCF of natural gas to meet Ohio's requirements. This represents a 9.7 percent increase in the supplies of natural gas to Ohio compared to the same period in the previous twelve months.

Of the 793,313 MMCF total procurement, interstate gas purchases and synthetic natural gas (SNG) comprise 92.42 percent (See Table 9). Purchases of Ohio gas comprise the remaining 7.58 percent of the total. The 60,162 MMCF of Ohio production of natural gas purchased by the eight major gas utilities from May 1983 to April 1984 represents a 2.9 percent increase in their purchases of Ohio's product during the preceding annual period. This amount corresponds to approximately 39.8 percent of the state's total production of 151,300 MMCF in calendar year 1983.

Domestic interstate gas is the major source of supply for Ohio. Columbia Gas Transmission Corporation and Consolidated Gas Supply Corporation provided 67.42 percent of the natural gas supplied to the eight major Ohio gas distribution companies from May 1983 through April 1984.

Historical Behavior of Interstate Natural Gas Supplies: Until 1978, wellhead prices paid by interstate transmission companies to natural gas producers were under federal control. Starting in the early seventies, and especially after the OPEC oil price increase of 1973, the federally-regulated interstate gas prices lagged behind the unregulated prices which the product commanded at the wellhead. Consequently, there were supply shortages in the interstate natural gas markets during the heating season.

In Ohio, which is more than 90% dependent on interstate gas, a ban was imposed upon new customer hook-ups in 1972 which remained in effect until 1978. Similarly, base allocations of lower priority industrial and commercial customers were curtailed between 1973 and 1978.

The Natural Gas Policy Act (NGPA), which became effective in 1978, deregulated some gas prices immediately, and legislated a phased decontrol of prices for many categories of natural gas by 1985. Pursuant to the passage of the NGPA, relatively unfettered increases in interstate gas prices have stimulated new and costlier gas production from deep wells, thus increasing available supplies. The same price increase have also choked off sectoral requirements. There have been no curtailments in Ohio since 1978, and none are expected in the foreseeable future.

Historical Behavior of Sectoral Gas Requirements

Annual Sectoral Requirements: Long-term trends in annual sectoral natural gas prices and sectoral natural gas requirements for Ohio are presented in Figures B-5 thru B-8. It is clear from these figures that the dynamic behavior of natural gas markets in Ohio have been characterized by increasing price trends and declining requirement trends since the early seventies.

Between 1970 and 1983, in response to a series of worldwide price shocks, including the OPEC oil price increases of 1973 and 1978, the price of natural gas in Ohio increased over eightfold in the residential and commercial sectors, and over ninefold in the industrial sector (See Table 10). These price increases far exceed the increase in the rate of inflation (See Table 11), or the rate of increase of the gross state product. Such significant and sustained increases in sectoral prices have induced significant and sustained conservation efforts among sectoral customers, which in turn have been translated into declining sectoral requirement trends.

It should be noted, however, that the declining trends in industrial sector requirements represent not only the net outcomes of price induced energy conservation and fuel switching programs, but also a permanent loss in industrial capacity, especially in the older and more energy intensive manufacturing industries of the state's economy.

Monthly Sectoral Requirements: The monthly time series behavior of residential, commercial, industrial, and total natural gas requirements in Ohio from January 1974 through April 1984, along with the Division's independent forecasts for May 1985 through June 1985 are displayed in figures B-1 through B-4. The seasonal variations in residential and commercial requirements can easily be discerned from these figures. Natural gas is the primary source of space heating in Ohio. Demand peaks in all sectors during the heating season and falls off during the cooling season. The dramatic effects of the curtailments imposed on the industrial sector during the 1976-77 heating season is clearly discernable in figure B-4.

Utility Forecasts: Consolidated Results and Twelve Month Outlook

Consolidated Results: Aggregate supply and demand projections of the eight major utilities, as presented in Table 12 and Figure 8, indicate a 0.01 percent annual surplus of natural gas supplies over requirements. All eight utilities project supply to be in excess of, or equal to, requirements during the 1984-85 heating season. Supply and demand projections of the individual utilities, as submitted in their "Monthly Reports of Supply and Demand of Natural Gas," are summarized in Appendix B, Table B-9.

Table 13 shows the actual aggregate monthly sectoral requirements for the eight major utilities from May 1983 through April 1984, along with the utilities' consolidated projections for the May 1984 through April 1985 period. The forecast shows decreases in demand in all sectors. Figure 9 is a graphic representation of the utilities' consolidated sectoral projections for the forecast period. Overall, the forecast total annual gas requirement shows an decrease of 8.2 percent relative to the same twelve month period last year.

Actual and forecast aggregate supply of natural gas by source is displayed in Table 14. Delivered product from all pipeline sources is expected to decrease 8.2 percent over the previous twelve month period. The majority of this supply, roughly 91 percent, will continue to come from out-of-state sources. Columbia Gas Transmission Corporation by far the largest supplier to the state, is projected to supply 43.0 percent of natural gas demand.

Twelve Month Outlook: On the basis of the utilities' natural gas supply and sectoral requirement projections, the outlook for the next twelve months indicates no supply shortages, under both normal and 10 percent colder than normal weather conditions, in Ohio.

The Ohio Division of Energy will be monitoring developments in the supplies and requirements of natural gas throughout the rest of the year and will take appropriate action if a critical situation develops. However, Ohio Division of Energy's current conclusion is that prevailing conditions portend no shortages or curtailments of natural gas during the 1984-85 heating season.

Ohio Division of Energy Independent Forecast

Methodology

The independent natural gas demand forecasts prepared by Ohio Division of Energy for the eight major gas utilities serving Ohio are based upon time series analyses of sectoral requirements for each individual month of the year, between January 1970 and April 1984, adjusted for long-term annual trends, severe climatic conditions, and the business cycle.

Time series models, with adjustments, yield projections that possess better statistical properties, and are at least as accurate as alternative short-term forecasting techniques. They also offer the added flexibility of being able to produce updated forecasts which reflect and incorporate specific assumptions pertaining to the prevailing climatic and economic conditions every time the most recent actual monthly requirements are reported to Ohio Division of Energy. The utilization of an adjusted time series methodology is designed to provide a double check, thus reducing forecasting error for a more accurate and decisive diagnosis of energy requirements of the state.

Special Assumptions

We expect the relatively strong economic recovery experienced by the state to continue through out the forecasting horizon, with the unemployment rate remaining between 8.5 to 9.5 percent. Although this would ordinarily tend to increase industrial requirements, the Division of Energy anticipates that increasing natural gas prices, as the final phase of NGPA goes into effect on January 1, 1985, shall keep industrial requirements at or slightly below current levels.

Results

The results obtained on the basis of ODOE's independent forecast of sectoral requirements and the utilities forecasts of supplies are presented in Tables 15 and 17-20, for the 1984-85 heating season. Summary results presented in Table 15 indicate a potential deficiency of 11.3 percent in the case of a 10 percent colder than normal winter. Given the availability of interstate gas supplies and the current storage capacities of Ohio utilities, no actual deficiencies or curtailments are expected.

The deficiencies indicated in Tables 15 and 17-20 arise, in the first place, from the low supply projections made by Ohio utilities. Clearly, such low projections do not reflect anticipated natural gas supply shortages in the next 12 months. Rather, they reflect anticipated substantial declines in sectoral requirements in response to anticipated substantial increases in sectoral natural gas prices, as the final phase of NGPA price decontrols go into effect on January 1, 1985. The differences between the Division's forecast of sectoral requirements and the utilities forecasts of sectoral requirements seem to arise, therefore, from different assumptions pertaining to the magnitudes of the anticipated price increases during the forecasting horizon.

ODOE's independent forecasts for the four major utilities are compared with each company's forecast for the period from July 1984 through June 1985 in Appendix B, Tables B-1 through B-4. The Division's forecasts of sectoral end-use gas requirements for Ohio are presented in Appendix B, Tables B-5 through B-8. These have been adjusted for the long-term historical trends observed in sectoral natural gas requirements in the State. Finally, for comparison, Appendix B, Table B-9 displays twelve month forecasts produced monthly by each utility and reported to the Ohio Division of Energy.

Outlook

Any unexpected changes in the short-term behavior of residential and commercial requirements would mainly be associated with variations in the severity of the heating season, and alterations in the long-term trends followed by natural gas prices. Given conservation efforts and increasing supplies of natural gas, dramatic changes in the long-term trends followed by residential and commercial natural gas requirements and prices are not anticipated in the near future.

In recent years, the industrial sales of natural gas by utilities have decreased substantially. Part of this has been due to conservation, fuel switching and declining industrial activity in the basic industries. An increasing portion of this decline has also been the result of self-help programs administered by the PUCO and fuel oil displacement programs administered by the Federal Energy Reliability Commission (FERC).

The self-help program began as a response to natural gas curtailment in the 1970's. As discussed on pages 34 and 35, the utilities were unable to supply all of their customers' needs due to federal regulations on the price that interstate transmission companies could pay producers. Large industries were able to pay unregulated prices to producers and then contract with transmission and distribution conmpanies for delivery. The utilities charged a fee for transmission and could receive up to 25% of the gas for their other customers. With the dramatic rise in prices, industry and commercial firms again find it expedient to use self-help gas. The surfeit of natural gas in recent years makes it unnecessary for the utilities to take possession of natural gas. Therefore, the Public Utilities Commission of Ohio has recently moved to amend the self-help rules so that utilities may transmit self-help gas for a fee but do not aquire ownership of a fraction of it.

A second program which as resulted in a loss of industrial and commercial tariff customers for the utilities is the fuel oil displacement program. If a customer seriously threatens to switch to No. 6 fuel oil, FERC may allow the utility to sell gas at a lower price to this customer.

A further factor in future tariff sales is that bills are now pending in Congress which would allow utilities to act like common carriers transporting gas that they do not own, for a fee.

The Division expects a substantial amount of non-tarriff consumption for the next few years until natural gas is completely deregulated and the long-term take-or-pay contracts have expired.

Finally, rapid increases in gas prices, coupled with stabilized oil prices, are bringing oil into the picture as a competitively priced fuel. Many industrial and large commercial firms are developing dual fuel capability (oil and gas) in order to respond to possible unforeseen effects of the price fluctuations. However, many small industrial and commercial firms, as well as residential customers, will not have fuel-switching capability. This will no doubt increase conservation efforts as gas prices continue to escalate.

Emergency Response Capability Profile

There have been no natural gas curtailments in Ohio since 1978, and neither Ohio gas utilities nor the gas pipeline companies project any curtailments through April 1985. However, in the event of a shortage, it is anticipated that fuel-switching capability of industrial and large commercial users would be accelerated. Detailed emergency plans that describe strategies to respond to fuel supply shortfalls are on file at the Ohio Division of Energy.

Table 8: Total Natural Gas Requirements of All Commercial Utilities in Ohio, May 1983 through April 1984

	(1) Sales to All End Use	(2) Storage (In)	Total Requirement (1+2)	Percent of Total Ohio Requirement
Cincinnati Gas and Electric Co.	77612	0	77612	8.88
Columbia Gas of Ohio	262158	0	262158	29.99
Dayton Power and Light Co.	54572	0	54572	6.24
East Ohio Gas Co.	358920	64503	423423	48.44
National Gas and Oil Co.	15631	1192	16823	1.93
Ohio Gas Co.	7222	336	7558	0.87
River Gas Co.	4401	0	4401	0.50
West Ohio Gas Co.	12797	0	12797	1.46
Total Eight Major Utilities	793313	66031	859344	98.31
Total Small Utilities	8023	0	8023	0.92
Municipal Utilities	6768	0	6768	0.77
TOTAL ALL UTILITIES	808104	66031	874135	100.00

Source: ODOE Form SG-2 and SG-4.

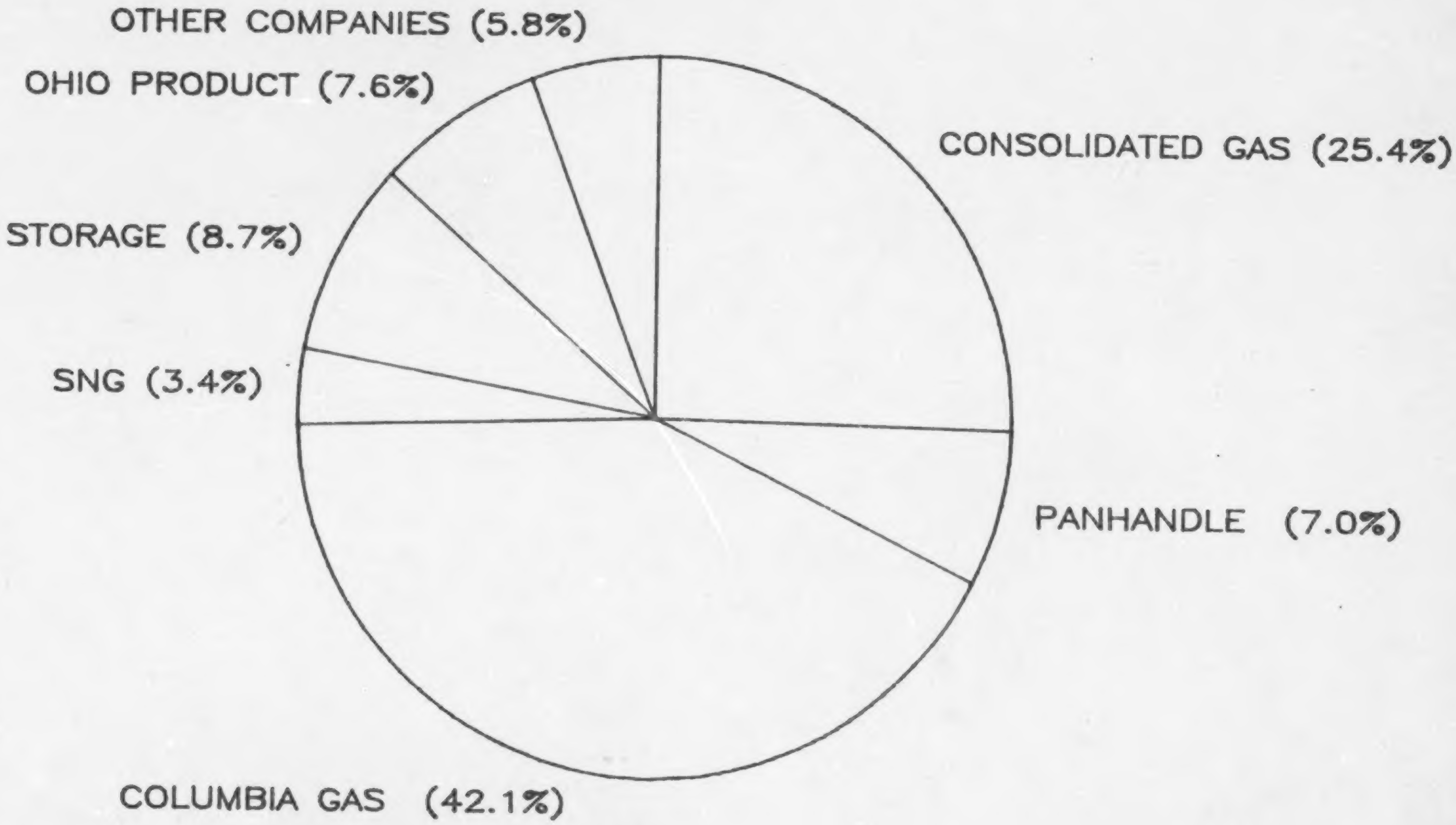
Table 9: Sources of Natural Gas Supplies to the Eight Major Gas Utilities, May 1983 through April 1984

	Supply	Percent of Total	Rank
Columbia Gas Transmission Corp.	333696	42.06	1
Consolidated Gas Supply Corp.	201204	25.36	2
Lawrenceburg Gas	32710	4.12	6
Michigan/Wisconsin Pipeline Co.	1140	0.14	11
Panhandle Eastern Pipeline Co.	55932	7.05	5
Tennessee Gas Pipeline Co.	1591	0.20	10
Texas Eastern Transmission Corp.	7922	1.00	8
Texas Gas Transmission Corp.	283	0.04	12
Green Springs (SNG) (Columbia LNG)	26736	3.37	7
Storage/Propane[1]	68972	8.69	3
Other	2965	0.37	9
Total SNG and Out-of-State	733151	92.42	
Ohio Product	60162	7.58	4
TOTAL	793313	100.00	

Note: [1] Gas in storage represents a source during the period under consideration. Figure is elevated because Cincinnati Gas and Electric maintains propane in storage for peak-sharing.

Source: Ohio Division of Energy Form SG-2

FIG. 6. SOURCES OF NATURAL GAS SUPPLY FOR THE EIGHT MAJOR GAS UTILITIES (MAY 1983 - APRIL 1984)



SOURCE: OHIO DIVISION OF ENERGY

Table 10: Ohio Natural Gas Prices in Current Dollars, 1970-1983 ($ Per MMBtu)

Year	Residential	Commercial	Industrial
1970	0.84	0.73	0.52
1971	0.96	0.81	0.56
1972	1.02	0.86	0.62
1973	1.08	0.94	0.65
1974	1.23	1.07	0.85
1975	1.51	1.35	1.12
1976	1.79	1.63	1.43
1977	2.23	2.07	1.95
1978	2.43	2.24	2.05
1979	2.78	2.57	2.32
1980	3.45	3.23	2.97
1981	3.87	3.61	3.34
1982	4.80	4.53	4.20
1983	5.88	5.40	5.01

Source: American Gas Association, *Gas Facts*, and the Ohio Division of Energy.

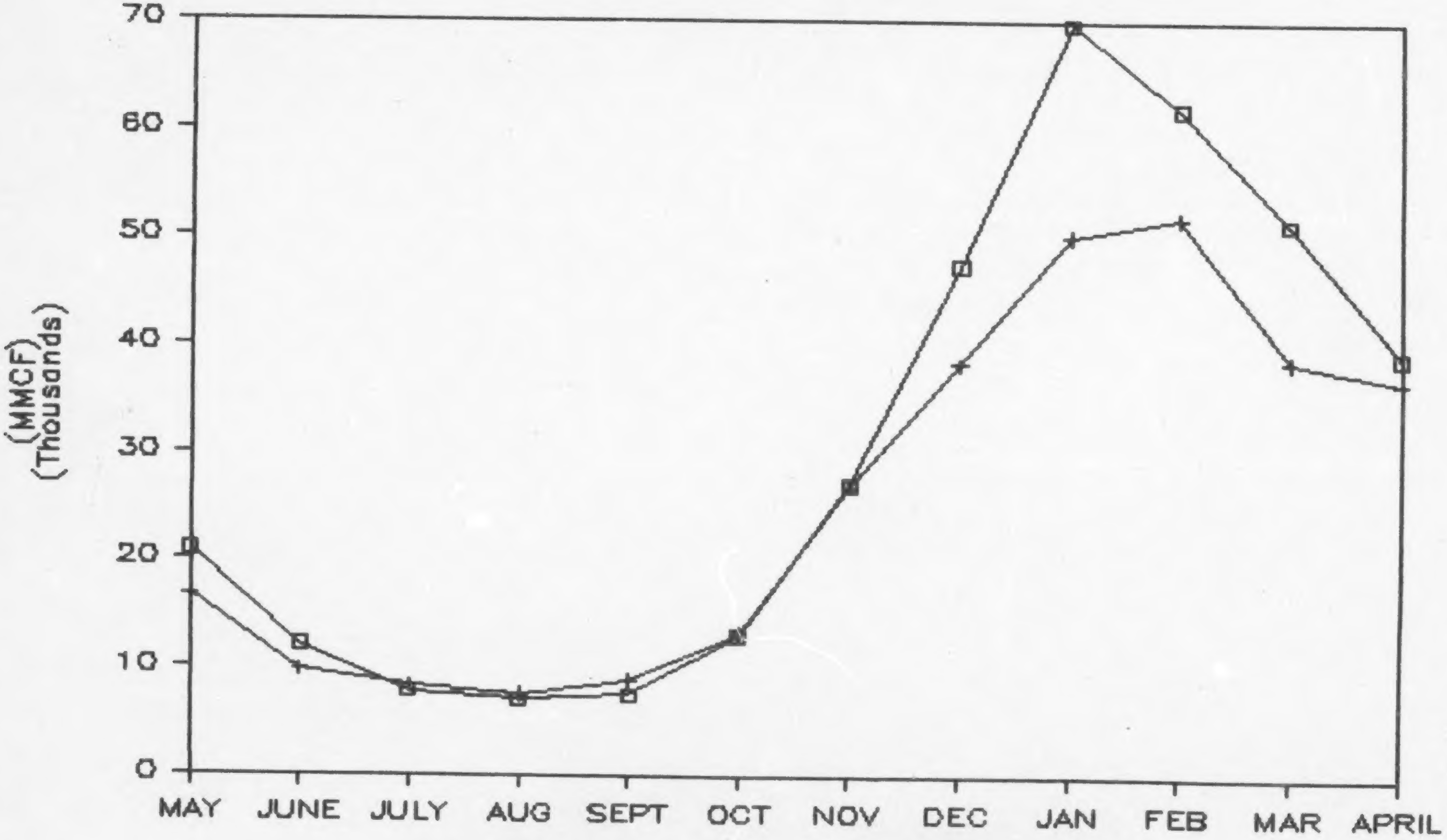
Table 11: Ohio Natural Gas Prices in Constant Dollars, 1970-1983
($ Per MMBtu)

Year	Residential	Commercial	Industrial
1970	0.72	0.63	0.45
1971	0.78	0.67	0.47
1972	0.81	0.69	0.49
1973	0.81	0.71	0.46
1974	0.83	0.72	0.58
1975	0.94	0.84	0.69
1976	1.05	0.96	0.84
1977	1.23	1.14	1.07
1978	1.24	1.15	1.05
1979	1.28	1.18	1.07
1980	1.40	1.31	1.20
1981	1.42	1.34	1.25
1982	1.66	1.57	1.45
1983	1.84	1.69	1.57

Note: All prices are stated in terms of 1967 dollars.

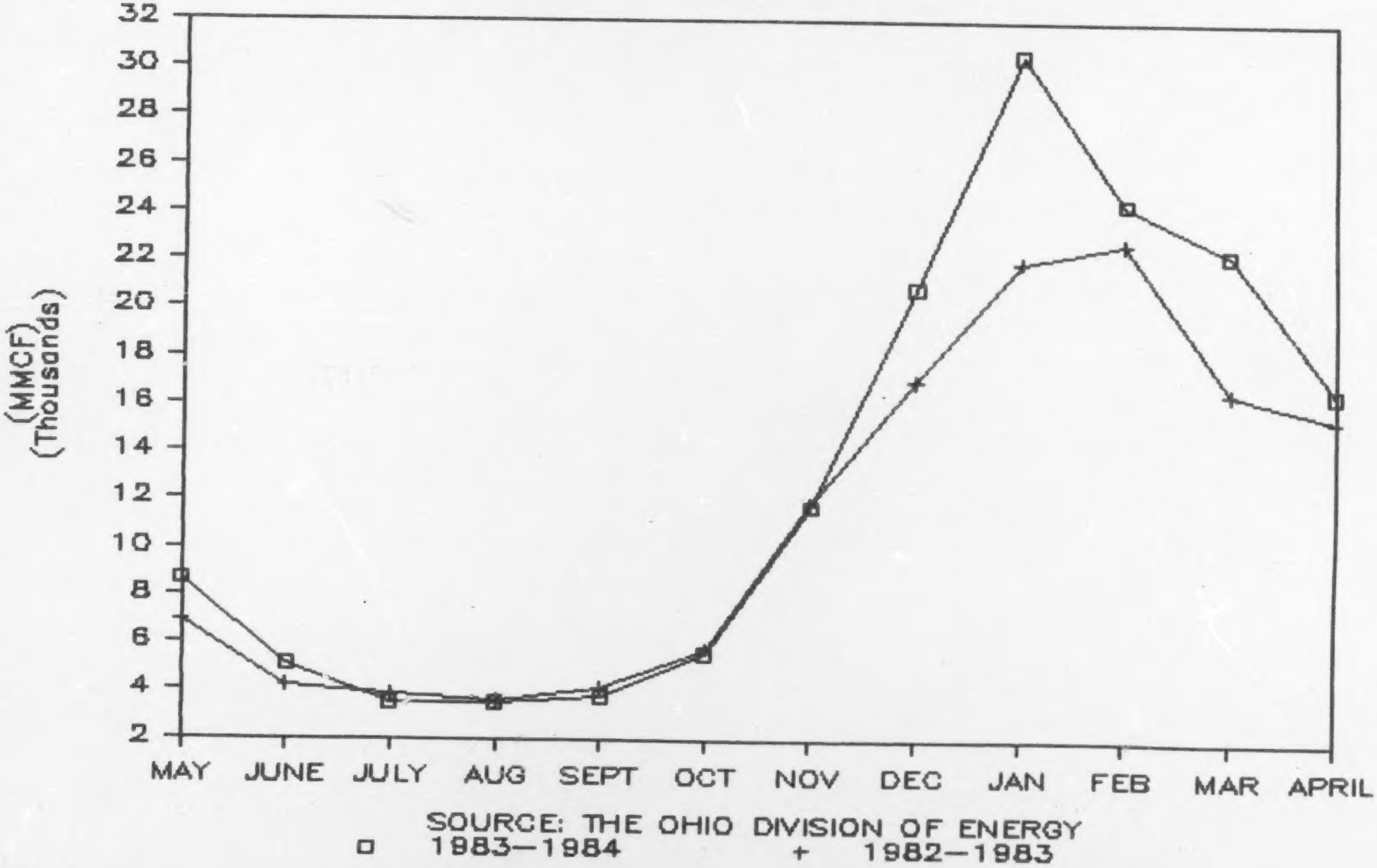
Source: American Gas Association,Gas Facts, 1982, U.S. Department of Commerce, "Survey of Current Business", April 1982, and the Ohio Division of Energy.

FIG. 7A. OHIO RESIDENTIAL SECTOR NATURAL GAS CONSUMPTION
1982 - 1983 VS. 1983 - 1984



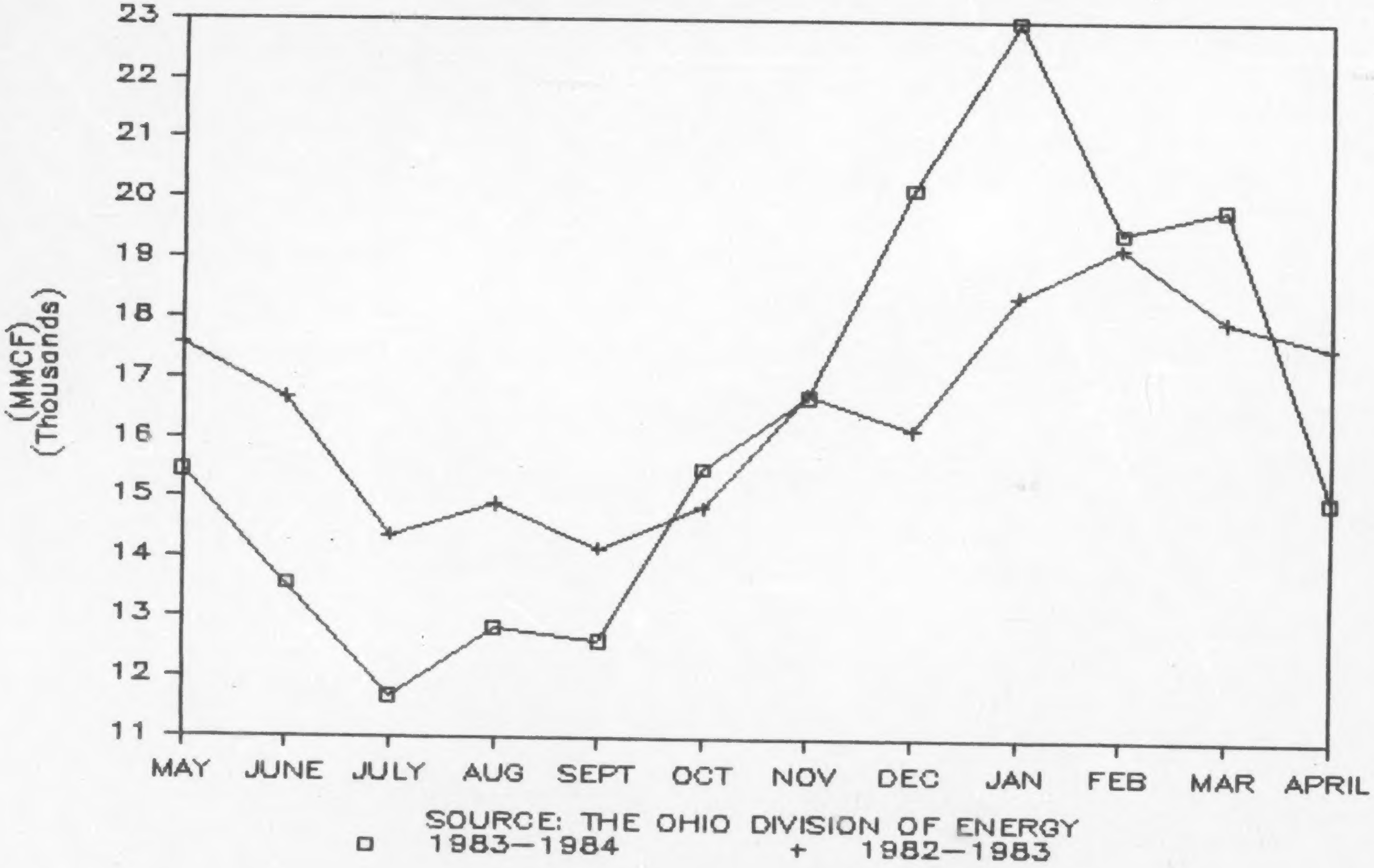
SOURCE: THE OHIO DIVISION OF ENERGY

FIG. 7B. OHIO COMMERCIAL SECTOR NATURAL GAS CONSUMPTION
1982 - 1983 VS. 1983 - 1984



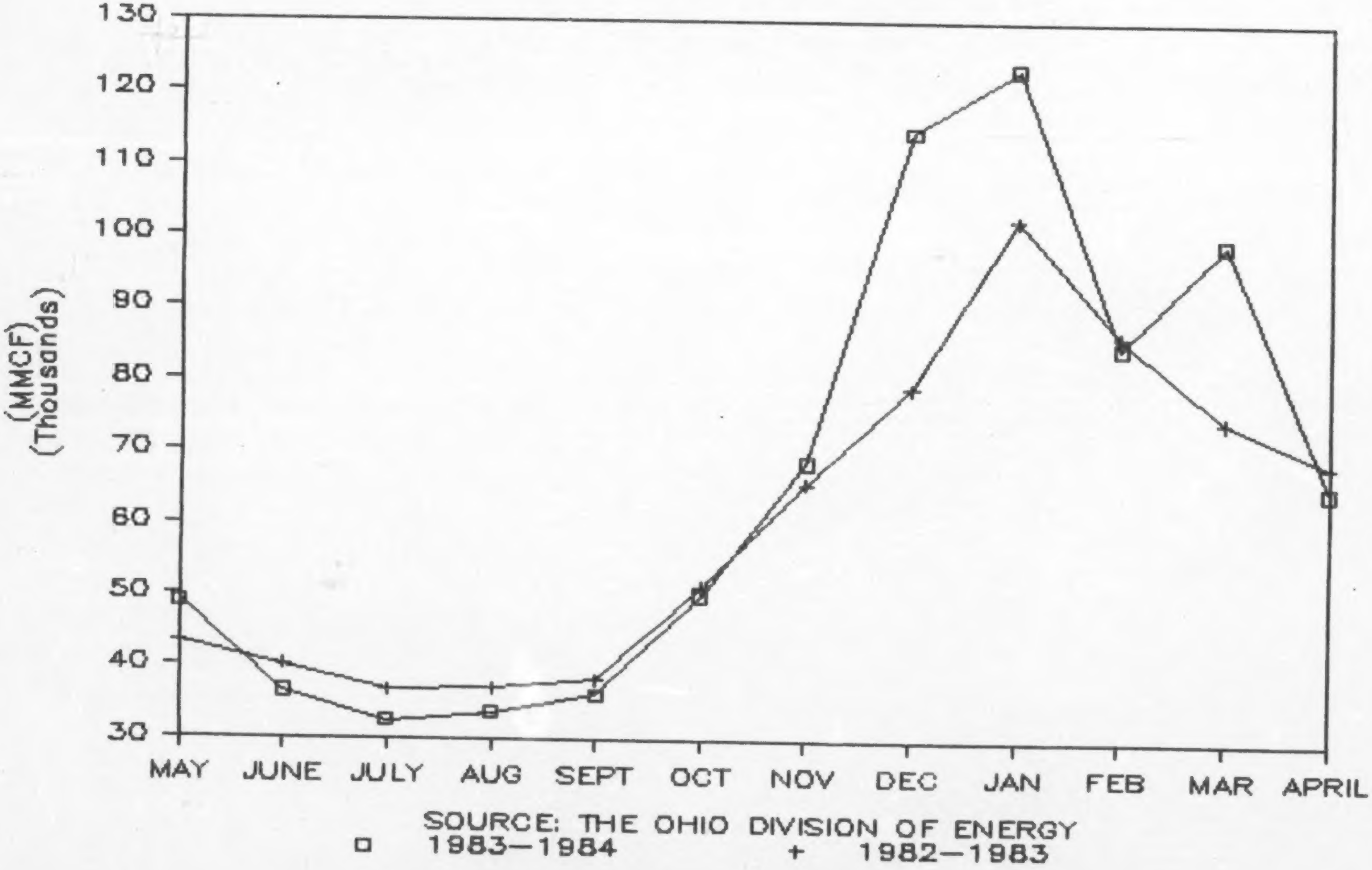
SOURCE: THE OHIO DIVISION OF ENERGY

FIG. 7C. OHIO INDUSTRIAL SECTOR NATURAL GAS CONSUMPTION
1982 - 1983 VS. 1983 - 1984



SOURCE: THE OHIO DIVISION OF ENERGY

FIG. 7D. TOTAL OHIO NATURAL GAS CONSUMPTION
1982 - 1983 VS. 1983 - 1984



SOURCE: THE OHIO DIVISION OF ENERGY

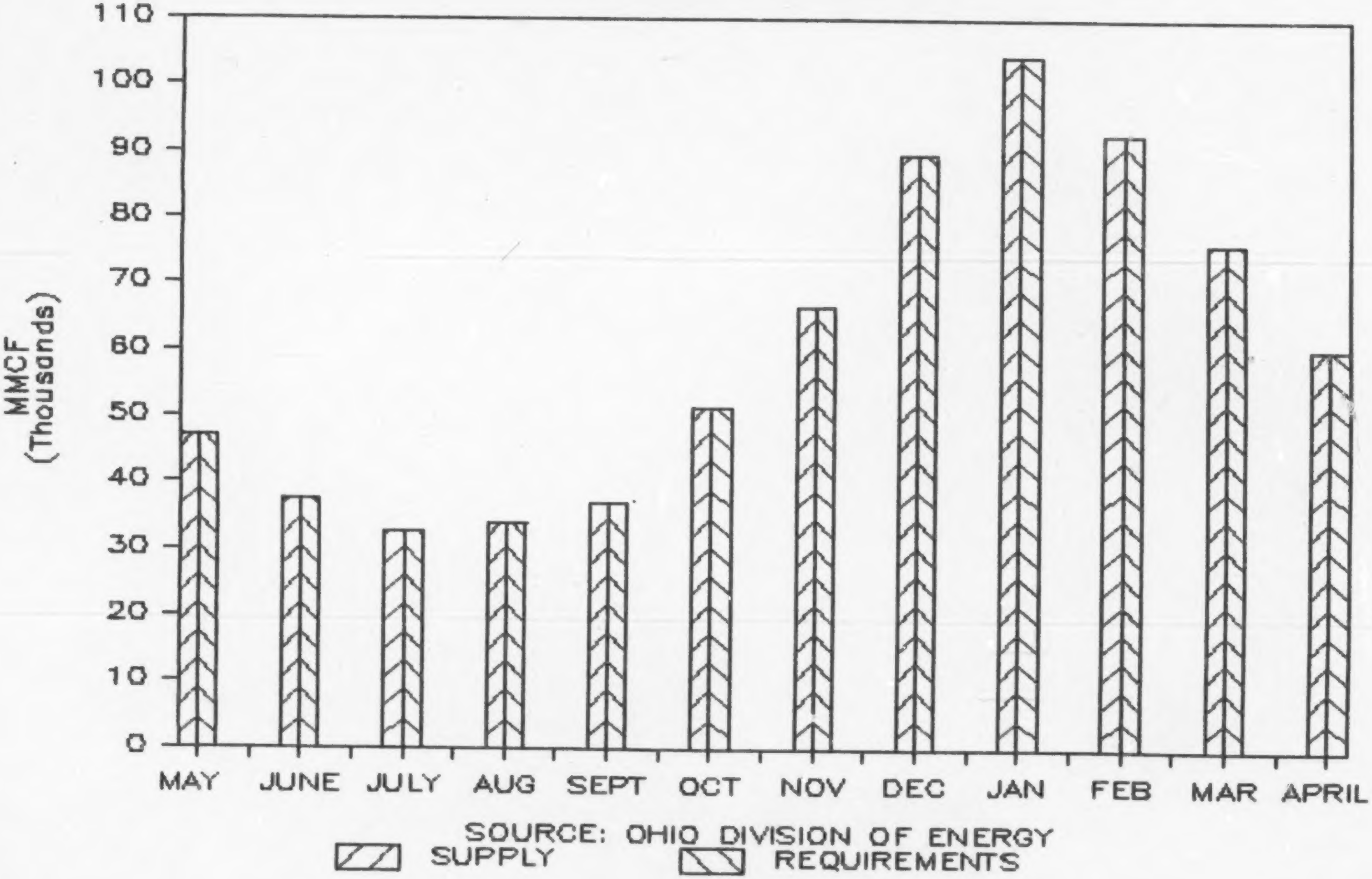
Table 12. Projected Aggregate Supply and Requirements for Natural Gas for Eight Major Utilities
May 1984 - April 1985
(MMCF)

	Supply	Demand	Deficiency	Percent Deficiency
MAY	46971	46971	0	0
JUNE	37538	37538	0	0
JULY	32521	32521	0	0
AUGUST	33817	33817	0	0
SEPTEMBER	36884	36884	0	0
OCTOBER	51163	51163	0	0
NOVEMBER	66438	66438	0	0
DECEMBER	89699	89680	-19	-0.02
JANUARY	104356	104338	-18	-0.02
FEBRUARY	92443	92421	-22	-0.02
MARCH	75910	75892	-18	-0.02
APRIL	60217	60210	-7	-0.01
TOTALS				
SUMMER	299111	299104	-7	.00
WINTER	428846	428769	-77	-0.02
ANNUAL	727957	727873	-84	-0.01

NOTE: A positive deficiency indicates a shortage;
A negative deficiency indicates a surplus.

SOURCE: ODOE FORM SG-1 and the OHIO DIVISION OF ENERGY

FIG 8. PROJECTED SUPPLY AND REQUIREMENTS OF NATURAL GAS
BY SECTOR, TOTAL OF EIGHT MAJOR COMPANIES
(MAY 1984 - APRIL 1985)



SOURCE: OHIO DIVISION OF ENERGY

Table 13. Comparison Between One Year of Actual and Forecast Demand for Eight Major Ohio Utilities by Sector

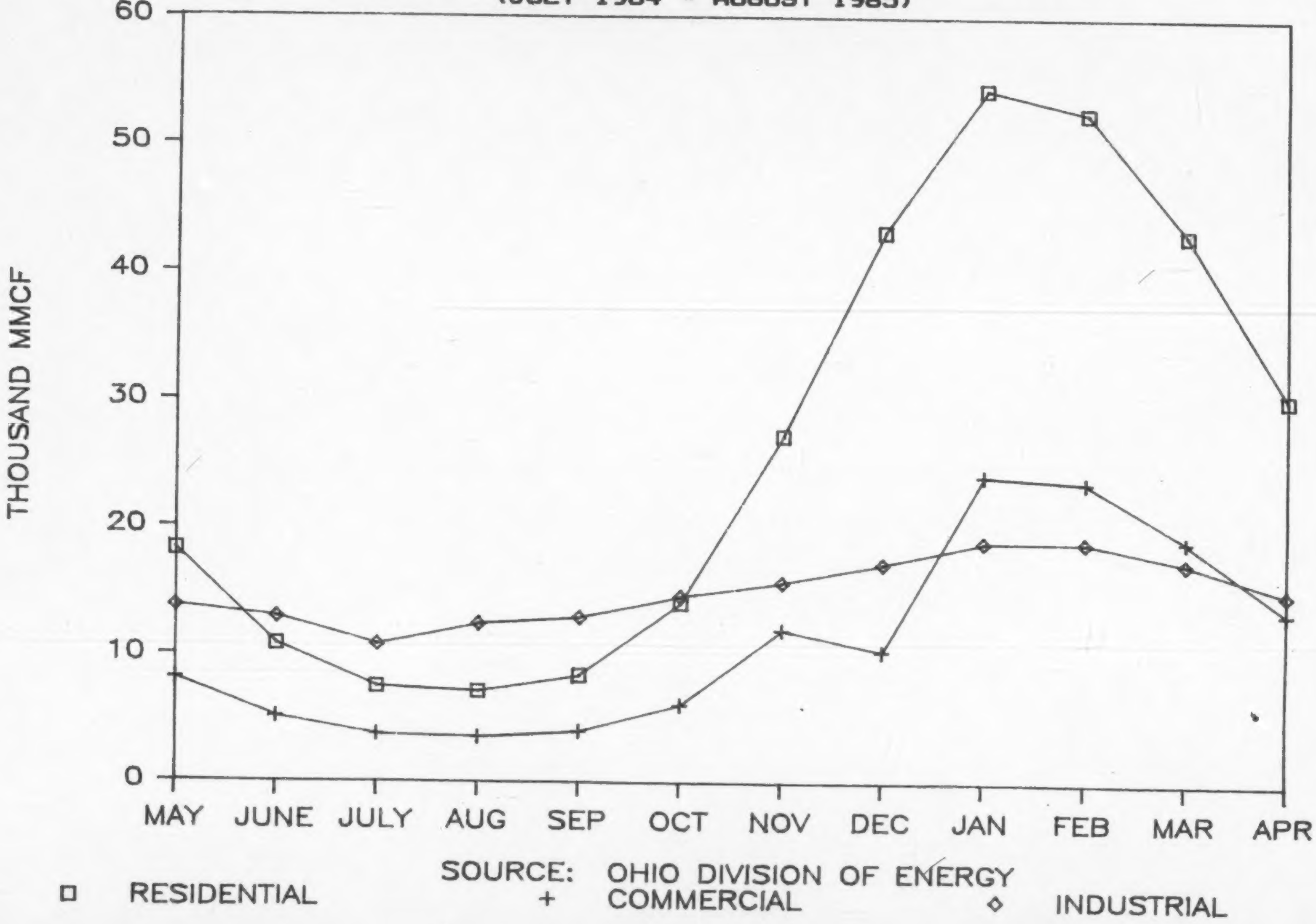
MONTH/YEAR	DEGREE DAYS	RESIDENTIAL REQUIREMENT	COMMERCIAL REQUIREMENT	INDUSTRIAL REQUIREMENT	OTHER REQUIREMENT	STORAGE (IN)	TOTAL REQUIREMENT	DEFICIENCY
5/84 5/83	202 196 3.1%	18224 20915 -12.9%	8086 8661 -6.6%	13845 15449 -10.4%	-3701 -6187 40.2%	10517 10136 3.8%	46971 48974 -4.1%	0 0 0.0%
6/84 6/83	30 29 3.4%	10800 12054 -10.4%	5053 5094 -0.8%	12896 13553 -4.8%	-1326 -4014 67.0%	10115 9806 3.2%	37538 36493 2.9%	0 0 0.0%
7/84 7/83	5 5 0.0%	7533 7789 -3.3%	3654 3508 4.2%	10847 11678 -7.1%	654 -89 834.8%	9833 9526 3.2%	32521 32412 0.3%	0 0 0.0%
8/84 8/83	11 11 0.0%	7144 7005 2.0%	3472 3481 -0.3%	12378 12812 -3.4%	1851 1153 60.5%	8972 9210 -2.6%	33817 33661 0.5%	0 0 0.0%
9/84 9/83	87 87 0.0%	8356 7402 12.9%	3957 3767 5.0%	12943 12607 2.7%	2958 3348 -11.6%	8670 8956 -3.2%	36884 36080 2.2%	0 0 0.0%
10/84 10/83	334 334 0.0%	14085 12896 9.2%	6148 5582 10.1%	14568 15503 -6.0%	9371 9083 3.2%	6991 6933 0.8%	51163 49997 2.3%	0 0 0.0%
11/84 11/83	690 686 0.6%	27185 26978 0.8%	12041 11725 2.7%	15659 16695 -6.2%	11553 11266 2.5%	0 2003 -100.0%	66438 68668 -3.2%	0 0 0.0%
12/84 12/83	1052 1028 2.3%	43221 47401 -8.8%	19299 20872 -7.5%	17155 20184 -15.0%	10005 26128 -61.7%	0 0 0.0%	89680 114585 -21.7%	-19 0 999.9%
1/85 1/84	1141 1124 1.5%	54362 69695 -22.0%	24050 30538 -21.2%	18854 22979 -18.0%	5746 337 1605.0%	1326 0 999.9%	104338 123549 -15.5%	-18 0 999.9%
2/85 2/84	980 977 0.3%	52473 61863 -15.2%	23573 24405 -3.4%	18885 19460 -3.0%	-3836 -21481 82.1%	1326 509 160.5%	92421 84756 9.0%	-22 0 999.9%
3/85 3/84	823 814 1.1%	43003 51212 -16.0%	19043 22273 -14.5%	17252 19863 -13.1%	-3406 5731 -159.4%	0 2 -100.0%	75892 99081 -23.4%	-18 0 999.9%
4/85 4/84	735 455 61.5%	30174 38993 -22.6%	13413 16504 -18.7%	14876 15009 -0.9%	-6236 -14399 56.7%	7983 8950 -10.8%	60210 65057 -7.5%	-7 0 999.9%
SUMMER TOTAL	1404 1117 25.7%	96316 107054 -10.0%	43783 46597 -6.0%	92353 96611 -4.4%	3571 -11105 132.2%	63081 63517 -0.7%	299104 302674 -1.2%	-7 0 999.9%
WINTER TOTAL	4686 4629 1.2%	220244 257149 -14.4%	98006 109813 -10.8%	87805 99181 -11.5%	20062 21981 -8.7%	2652 2514 5.5%	428769 490639 -12.6%	-77 0 999.9%
YEAR TOTAL	6090 5746 6.0%	316560 364203 -13.1%	141789 156410 -9.3%	180158 195792 -8.0%	23633 10876 117.3%	65733 66031 -0.5%	727873 793313 -8.2%	-84 0 999.9%

-NOTE: (1) WINTER TOTAL IS A SUM OF THE VALUES IN NOVEMBER, DECEMBER, JANUARY, FEBRUARY, AND MARCH

(2) 999.9% REPRESENTS AN INFINITE PERCENTAGE CHANGE RESULTING FROM AN INCREASE FROM A ZERO VALUE TO SOME NON-ZERO VALUE AND THUS A DIVISION BY ZERO.

(3) A POSITIVE DEFICIENCY INDICATES SHORTAGE, A NEGATIVE DEFICIENCY INDICATES SURPLUS.

FIG. 9. PROJECTED REQUREMENTS OF NATURAL GAS BY SECTOR
EIGHT MAJOR COMPANIES
(JULY 1984 - AUGUST 1985)



SOURCE: OHIO DIVISION OF ENERGY

Table 14. Comparison Between One Year of Actual and Forecast Supply for Eight Major Ohio Gas Utilities by Source (MMCF)

MO/YR	COLUMBIA GAS	CONSOLID-ATED GAS	LAWREN-CEBURG	MICH. WISC.	PANHANDLE EAST	TENN. GAS	TEXAS EASTERN	TEXAS GAS	EMERG GAS	OHIO PRODUCT	SNG	STORAGE/ PROPANE	OTHER	TOTAL SUPPLIES
5/84	18597	17010	573	54	4516	110	630	13	0	5178	0	230	60	46971
5/83	18166	17562	657	118	4523	119	605	11	0	4871	1745	421	176	48974
	2.4%	-3.1%	-12.8%	-54.2%	-0.2%	-7.6%	4.1%	18.2%	0.0%	6.3%	-100.0%	-45.4%	-65.9%	-4.1%
6/84	13931	11896	1059	48	4467	110	610	9	0	5239	0	165	4	37538
6/83	11940	12040	663	87	4409	104	605	7	0	5238	1376	321	-297	36493
	16.7%	-1.2%	59.7%	-44.8%	1.3%	5.8%	0.8%	28.6%	0.0%	0.0%	-100.0%	-48.6%	101.3%	2.9%
7/84	9567	9941	1107	37	4619	110	630	8	0	5354	0	170	73	32521
7/83	9516	10257	1003	52	4529	106	625	6	0	4937	1225	164	-8	32412
	0.5%	-3.1%	10.4%	-28.8%	2.0%	3.8%	0.8%	33.3%	0.0%	8.4%	-100.0%	3.7%	1012.5%	0.3%
8/84	8836	10791	2039	38	4439	110	620	6	0	5756	0	165	112	33817
8/83	9582	10822	1153	61	4371	108	638	6	0	5418	1246	145	111	33661
	-7.8%	-0.3%	76.8%	-37.7%	1.6%	1.9%	-2.8%	0.0%	0.0%	6.2%	-100.0%	13.8%	0.9%	0.5%
9/84	11285	13007	2055	147	4296	110	600	8	0	5240	1	165	-30	36884
9/83	9404	12605	1956	76	4255	122	730	8	0	5200	1344	145	235	36080
	20.0%	3.2%	5.1%	93.4%	1.0%	-9.8%	-17.8%	0.0%	0.0%	0.8%	-99.9%	13.8%	-112.8%	2.2%
10/84	18768	18808	2364	94	4698	135	620	13	0	5290	0	170	203	51163
10/83	17358	16890	2710	88	4569	136	799	13	0	5069	1845	189	331	49997
	8.1%	11.4%	-12.8%	6.8%	2.8%	-0.7%	-22.4%	0.0%	0.0%	4.4%	-100.0%	-10.1%	-38.7%	2.3%
11/84	31468	8349	2755	104	4697	126	610	30	0	5385	1243	11365	306	66438
11/83	28186	14077	3787	89	4612	128	694	27	0	5303	2727	8648	390	68668
	11.6%	-40.7%	-27.3%	16.9%	1.8%	-1.6%	-12.1%	11.1%	0.0%	1.5%	-54.4%	31.4%	-21.5%	-3.2%
12/84	44803	14448	2884	121	5054	150	620	46	0	5360	1111	14705	397	89699
12/83	55412	19918	3881	125	5335	149	669	53	0	5321	3583	19846	293	114585
	-19.1%	-27.5%	-25.7%	-3.2%	-5.3%	0.7%	-7.3%	-13.2%	0.0%	0.7%	-69.0%	-25.9%	35.5%	-21.7%
1/85	53077	17301	3014	104	5073	150	630	49	0	5301	1111	18028	379	104356
1/84	61160	24434	4672	130	5404	160	671	55	0	4780	3829	18033	221	123549
	-13.2%	-29.2%	-35.5%	-20.0%	-6.1%	-6.3%	-6.1%	-10.9%	0.0%	10.9%	-71.0%	-0.0%	71.5%	-15.5%
2/85	46694	19672	2988	158	4576	140	570	41	0	5260	1004	10959	381	92443
2/84	39995	17184	4138	104	4620	148	557	35	0	4487	3605	9587	296	84756
	16.7%	14.5%	-27.8%	51.9%	-1.0%	-5.4%	2.3%	17.1%	0.0%	17.2%	-72.1%	14.3%	28.7%	9.1%
3/85	35591	15947	3364	276	4844	150	630	35	0	5233	1132	8719	-11	75910
3/84	47165	22163	4683	115	4900	160	649	41	0	4788	2946	10941	530	99081
	-24.5%	-28.0%	-28.2%	140.0%	-1.1%	-6.3%	-2.9%	-14.6%	0.0%	9.3%	-61.6%	-20.3%	-102.1%	-23.4%
4/85	23659	21513	2706	259	4464	150	610	21	0	5307	1006	535	-13	60217
4/84	25812	23252	3407	95	4405	151	680	21	0	4750	1265	532	687	65057
	-8.3%	-7.5%	-20.6%	172.6%	1.3%	-0.7%	-10.3%	0.0%	0.0%	11.7%	-20.5%	0.6%	-101.9%	-7.4%
SUMMER TOTAL														
	104643	102966	11903	677	31499	835	4320	78	0	37364	1007	1600	409	299111
	101778	103428	11549	577	31061	846	4682	72	0	35483	10046	1917	1235	302674
	2.8%	-0.4%	3.1%	17.3%	1.4%	-1.3%	-7.7%	8.3%	0.0%	5.3%	-90.0%	-16.5%	-66.9%	-1.2%
WINTER TOTAL														
	211633	75717	15005	763	24244	716	3060	201	0	26539	5601	63776	1452	428846
	231918	97776	21161	563	24871	745	3240	211	0	24679	16690	67055	1730	490639
	-8.7%	-22.6%	-29.1%	35.5%	-2.5%	-3.9%	-5.6%	-4.7%	0.0%	7.5%	-66.4%	-4.9%	-16.1%	-12.6%
YEAR TOTAL														
	316276	178683	26908	1440	55743	1551	7380	279	0	63903	6608	65376	1861	727957
	333696	201204	32710	1140	55932	1591	7922	283	0	60162	26736	68972	2965	793313
	-5.2%	-11.2%	-17.7%	26.3%	-0.3%	-2.5%	-6.8%	-1.4%	0.0%	6.2%	-75.3%	-5.2%	-37.2%	-8.2%

-NOTE: (1) WINTER TOTAL IS A SUM OF THE VALUES IN NOVEMBER, DECEMBER, JANUARY, FEBRUARY, AND MARCH.

(2) 999.9% REPRESENTS AN INFINITE PERCENTAGE CHANGE RESULTING FROM AN INCREASE FROM A ZERO VALUE TO SOME NON-ZERO VALUE AND THUS A DIVISION BY ZERO.

Table 15: Independent Forecasts of Gas Supply and Demand for the Eight Major Ohio Gas Utilities
November 1984 - March 1985
(MMCF)

	Normal Weather			10% Colder Than Normal Weather		
	Supply	Demand	Surplus[1] (Deficiency)	Supply	Demand	Surplus[1] (Deficiency)
Cincinnati Gas & Electric	50436	53100	(2664)	53949	54990	(1041)
Columbia Gas	147478	178000	(30522)	156956	186443	(29487)
Dayton Power & Light	34777	37400	(2623)	37254	39148	(1894)
East Ohio Gas	174597	203200	(28603)	184841	211940	(27099)
National Gas	6788	4862	1926	6788	5030	1758
Ohio Gas	4207	4207	0	4522	4522	0
River Gas	2528	2528	0	2667	2667	0
West Ohio Gas	7590	7590	0	8178	8178	0
Total	428401	490887	(62486)	455155	512918	(57763)

[1] Note: Numbers within parentheses indicate deficiency. Columbia Gas of Ohio and East Ohio Gas estimate that there is over 145,853 MMCF in storage to meet any deficiencies in Ohio. East Ohio Gas Company indicated that their useable storage capacity of 143,307 MMCF represents 23% of Consolidated's useable storage capacity.

Source: June 1984 ODOE Form SG-2 of reporting utilities, and the Ohio Division of Energy.

Table 16: Independent Forecast of Annual Natural Gas End Use Requirements, Calendar Year 1984 (TBTU)

	Actual 1983	Lower 95% Confidence Limit	Forecast 1985	Upper 95% Confidence Limit	Forecast % Change
Residential	319.4	294.9	310.4	325.9	-2.82
Commercial	139.4	124.5	131.0	137.6	-6.03
Industrial	191.7	161.5	170.0	178.5	-11.32
Other*	38.0	46.7	49.2	51.6	29.47
Total	688.5	627.6	660.6	693.6	-4.05

Source: Ohio Division of Energy

*Other includes transportation and electric utilities sectors.

**Industrial forecast is based on the assumption that average unemployment will be down to 7%.

Table 17: Independent Forecasts of Gas Supply and Demand for Cincinnati Gas and Electric Company
November 1984 - March 1985
(MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]
November 1984	7685	648	7300	385	8205	713	7581	624
December 1984	11264	947	12100	(836)	12041	1042	12511	(470)
January 1985	12188	1119	14200	(2012)	13087	1231	14686	(1599)
February 1985	10679	921	9500	1179	11419	1013	9900	1519
March 1984	8620	719	10000	(1380)	9197	791	10312	(1115)
Total	50436		53100	(2664)	53949		54990	(1041)

Notes: Totals may not add due to independent rounding.
HDD - Heating Degree-Days.
Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: Cincinnati Gas & Electric's June ODOE Form SG-2, and the Ohio Division of Energy.

Table 18: Independent Forecasts of Gas Supply and Demand for Columbia Gas of Ohio November 1984 - March 1985 (MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)	Supply	HDD[2]	Demand	Surplus[3] (Deficiency)
November 1984	23379	589	25000	(1621)	24462	648	26044	(1582)
December 1984	30704	930	38500	(7796)	32498	1023	40146	(7648)
January 1985	36374	1192	46700	(10326)	38794	1311	48806	(10012)
February 1985	31412	1146	34500	(3088)	33785	1261	36536	(2751)
March 1984	25609	908	33300	(7691)	27417	999	34911	(7494)
Total	147478		178000	(30522)	156956		186443	(29487)

Notes: Totals may not add due to independent rounding.
HDD - Heating Degree-Days.
Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: Columbia Gas of Ohio's June 1984 ODOE Form SG-2, and the Ohio Division of Energy.

Table 19: Independent Forecasts of Gas Supply
and Demand for Dayton Power & Light Company
November 1984 - March 1985
(MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]
November 1984	4770	487	5100	(330)	5011	536	5286	(275)
December 1984	7068	896	7500	(432)	7671	986	7841	(170)
January 1985	8570	1161	10300	(1730)	9146	1277	10742	(1596)
February 1985	8526	1152	8000	526	9104	1267	8439	665
March 1984	5843	891	6500	(657)	6322	980	6839	(517)
Total	34777		37400	(2623)	37254		39148	(1894)

Notes: Totals may not add due to independent rounding.
HDD - Heating Degree-Days.
Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: Dayton Power & Light Company's June ODOE Form SG-2, and the Ohio Division of Energy

Table 20: Independent Forecasts of Gas Supply and Demand for East Ohio Gas Company
November 1984 - March 1985
(MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)	Supply	HDD[2]	Demand	Surplus[3] (Deficiency)
November 1984	26950	567	31000	(4050)	28408	624	32020	(3612)
December 1984	36229	956	44900	(8671)	38453	1052	46620	(8167)
January 1985	42181	1213	52100	(9919)	44776	1334	54282	(9506)
February 1985	37259	1176	37400	(141)	39424	1294	39516	(92)
March 1984	31978	946	37800	(5822)	33780	1041	39502	(5722)
Total	174597		203200	(28603)	184841		211940	(27099)

Notes: Totals may not add due to independent rounding.
HDD - Heating Degree-Days.
Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: East Ohio Gas Company's June 1983 ODOE Form SG-2, and the Ohio Division of Energy

APPENDIX A: ELECTRICITY

Table A-1: Allegheny Power System
Forecast of Electric Energy Demand
(1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
July	2,592	2,609	0.66	2,785	7.45
August	2,726	2,692	-1.25	2,852	4.62
September	2,471	2,510	1.58	2,668	7.97
October	2,560	2,665	4.10	2,785	8.79
November	2,653	2,694	1.55	2,829	6.63
December	3,090	2,990	-3.24	3,144	1.75
January	3,204	3,348	4.49	3,332	4.00
February	2,802	2,874	2.57	2,977	6.25
March	3,051	2,905	-4.79	3,125	2.43
April	2,648	2,596	-1.96	2,793	5.48
May	2,667	2,645	-0.82	2,760	3.49
June	2,662	2,622	-1.50	2,752	3.38

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-2: American Electric Power Forecast of Electric Energy Demand (1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
July	7,053	7,089	0.51	7,600	7.76
August	7,376	7,287	-1.21	7,594	2.96
September	6,398	6,678	4.38	6,806	6.38
October	6,367	6,930	8.84	6,808	6.93
November	6,711	7,230	7.73	7,036	4.84
December	8,051	7,958	-1.16	7,939	-1.39
January	8,290	8,741	5.44	8,366	0.92
February	7,201	7,982	10.85	7,349	2.06
March	7,904	7,816	-1.11	7,868	-0.46
April	6,944	6,917	-0.39	6,920	-0.35
May	6,823	6,788	-0.51	6,755	-1.00
June		6,893		7,007	

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-3: Cincinnati Gas and Electric Forecast of Electric Energy Demand (1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
July	1,616	1,451	-10.21	1,629	0.80
August	1,667	1,475	-11.52	1,604	-3.78
September	1,324	1,236	-6.65	1,335	0.83
October	1,204	1,184	-1.66	1,256	4.32
November	1,258	1,235	-1.83	1,296	3.02
December	1,547	1,380	-10.80	1,494	-3.43
January	1,575	1,465	-6.98	1,573	-0.13
February	1,304	1,312	0.61	1,362	4.45
March	1,443	1,338	-7.28	1,414	-2.01
April	1,231	1,154	-6.26	1,262	2.52
May	1,232	1,251	1.54	1,290	4.71
June		1,392		1,389	

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-4: Cleveland Electric Illuminating Company Forecast of Electric Energy Demand (1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
July	1,682	1,613	-4.10	1,700	1.07
August	1,797	1,625	-9.57	1,702	-5.29
September	1,587	1,497	-5.67	1,545	-2.65
October	1,466	1,535	4.71	1,527	4.16
November	1,399	1,496	6.93	1,515	8.29
December	1,617	1,598	-1.18	1,662	2.78
January	1,690	1,722	1.89	1,764	4.38
February	1,514	1,516	0.13	1,603	5.88
March	1,657	1,632	-1.51	1,696	2.35
April	1,450	1,481	2.14	1,529	5.45
May	1,495	1,544	3.28	1,517	1.47
June	1,564	1,537	-1.73	1,634	4.48

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-5: Dayton Power and Light Forecast of Electric Energy Demand (1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
July	1,023	981	-4.11	1,061	3.71
August	1,056	953	-9.75	1,050	-0.57
September	872	869	-0.34	893	2.41
October	843	914	8.42	870	3.20
November	882	914	3.63	913	3.51
December	1,099	1,028	-6.46	1,074	-2.27
January	1,121	1,161	3.57	1,141	1.78
February	922	1,032	11.93	943	2.28
March	1,033	1,032	-0.10	1,044	1.06
April	859	894	4.07	912	6.17
May	843	894	6.05	884	4.86
June		921		986	

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-6: Ohio Edison Company
Forecast of Electric Energy Demand
(1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
July	2,101	2,085	-0.76	2,158	2.71
August	2,191	2,139	-2.37	2,179	-0.55
September	1,941	1,859	-4.22	2,011	3.61
October	1,932	2,002	3.62	2,051	6.16
November	1,968	1,943	-1.27	2,048	4.07
December	2,246	2,104	-6.32	2,207	-1.74
January	2,296	2,265	-1.35	2,326	1.31
February	2,028	2,055	1.33	2,098	3.45
March	2,247	2,092	-6.90	2,230	-0.76
April	1,954	1,879	-3.84	2,011	2.92
May	1,976	1,870	-5.36	2,011	1.77
June		1,936		2,059	

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-7: Ohio Valley Electric Corporation Forecast of Electric Energy Demand (1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual
July	1,162	1,420	22.20
August	1,299	1,420	9.31
September	1,127	1,320	17.13
October	1,239	1,305	5.33
November	1,311	1,395	6.41
December	1,477	1,430	-3.18
January	1,381	1,370	-0.80
February	1,181	1,249	5.76
March	1,403	1,375	-2.00
April	1,339	1,299	-2.99
May	1,380	1,387	0.51
June	1,389	1,391	0.14

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-8: Toledo Edison Company
Forecast of Electric Energy Demand
(1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
July	676	675	-0.15	687	1.63
August	709	707	-0.28	696	-1.83
September	625	605	-3.20	632	1.12
October	606	649	7.10	640	5.61
November	638	626	-1.88	649	1.72
December	743	666	-10.36	709	-4.58
January	756	771	1.98	754	-0.26
February	644	734	13.98	665	3.26
March	724	725	0.14	708	-2.21
April	620	637	2.74	629	1.45
May	619	616	-0.48	629	1.62
June	658	642	-2.43	644	-2.13

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-9: Independent Forecast of Ohio Electricity Demand
Residential Sector
(1000 MWH)

Month	Lower 95% Confidence Limit	ODOE Forecast (1984-85)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
July	2,152	2,563	2,973	2,603	-1.5
August	2,267	2,695	3,124	2,818	-4.4
September	1,955	2,402	2,848	2,604	-7.8
October	1,457	1,921	2,384	1,936	-0.8
November	1,625	2,104	2,584	2,178	-3.4
December	2,151	2,646	3,142	2,727	-3.0
January	2,777	3,288	3,798	3,492	-5.8
February	2,369	2,895	3,420	2,891	0.1
March	2,095	2,625	3,165	2,771	-5.3
April	1,859	2,413	2,967	2,448	-1.4
May	1,468	2,073	2,679	2,111	-1.8
June	1,377	2,030	2,683		

Note: The forecast is based upon monthly summary statistics published by the Ohio Electric Utility Institute, for the eight major investor-owned electric utilities (excluding OVEC).

Table A-10: Independent Forecast of Ohio Electricity Demand
Commercial Sector
(1000 MWH)

Month	Lower 95% Confidence Limit	ODOE Forecast (1984-85)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
July	1,927	2,082	2,238	2,047	1.7
August	1,957	2,117	2,277	2,125	-0.4
September	1,845	2,010	2,175	2,060	-2.4
October	1,555	1,724	1,893	1,716	0.5
November	1,498	1,671	1,844	1,678	-0.4
December	1,649	1,826	2,004	1,850	-1.3
January	1,823	2,004	2,186	2,048	-2.1
February	1,720	1,906	2,091	1,902	0.2
March	1,662	1,851	2,041	1,889	-2.0
April	1,552	1,745	1,939	1,711	2.0
May	1,477	1,687	1,897	1,702	-0.9
June	1,631	1,857	2,082		

Note: The forecast is based upon monthly summary statistics published by the Ohio Electric Utility Institute, for the eight major investor-owned electric utilities (excluding OVEC).

Table A-11: Independent Forecast of Ohio Electricity Demand
Industrial Sector
(1000 MWH)

Month	Lower 95% Confidence Limit	ODOE Forecast (1984-85)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
July	3,443	3,844	4,246	3,281	17.2
August	3,545	4,009	4,473	3,542	13.2
September	3,477	3,995	4,514	3,616	10.5
October	3,438	4,006	4,574	3,607	11.1
November	3,290	3,903	4,517	3,554	9.8
December	3,117	3,773	4,429	3,447	9.5
January	3,191	3,887	4,582	3,708	4.8
February	3,209	3,942	4,676	3,719	6.0
March	3,363	4,132	4,901	4,020	2.8
April	3,220	4,023	4,827	3,927	2.4
May	3,206	4,063	4,920	4,006	1.4
June	3,173	4,080	4,987		

Note: The forecast is based upon monthly summary statistics published by the Ohio Electric Utility Institute, for the eight major investor-owned electric utilities (excluding OVEC).

Table A-12: Independent Forecast of Ohio Electricity Demand
All Sectors
(1000 MWH)

Month	Lower 95% Confidence Limit	ODOE Forecast (1984-85)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
July	8,036	8,840	9,644	8,341	6.0
August	8,257	9,185	10,113	8,923	2.9
September	7,848	8,886	9,924	8,712	2.0
October	7,120	8,256	9,393	7,698	7.2
November	7,087	8,315	9,542	7,854	5.9
December	7,615	8,928	10,240	8,705	2.6
January	8,371	9,763	11,155	9,745	0.2
February	7,897	9,365	10,832	8,937	4.8
March	7,705	9,244	10,783	9,105	1.5
April	7,078	8,686	10,293	8,467	2.6
May	6,656	8,386	10,109	8,192	2.4
June	6,706	8,544	10,381		

Note: The forecast is based upon monthly summary statistics published by the Ohio Electric Utility Institute, for the eight major investor-owned electric utilities (excluding OVEC).

APPENDIX B: NATURAL GAS

Table B-1: Cincinnati Gas and Electric Forecast of Natural Gas Requirements (MMCF)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
July	2,525	2,478	-1.86	2,500	-0.99
August	2,396	2,498	4.26	2,700	12.69
September	2,651	2,743	3.47	3,000	13.16
October	4,136	4,064	-1.74	4,700	13.64
November	7,102	7,685	8.21	7,300	2.79
December	13,409	11,264	-16.00	12,100	-9.76
January	13,641	12,188	-10.65	14,200	4.10
February	8,984	10,679	18.87	9,500	5.74
March	10,506	8,620	-17.95	10,000	-4.82
April	5,693	5,832	2.44	6,000	5.39
May	3,599	3,908	8.59	3,900	8.36
June		2,770		2,800	

Source: ODOE Form SG-2. and the Ohio Division of Energy.

Table B-2: Columbia Gas of Ohio
Forecast of Natural Gas Requirements
(MMCF)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
July	8,127	6,830	-15.96	7,300	-10.18
August	8,490	7,358	-13.33	8,300	-2.24
September	8,999	8,316	-7.59	9,200	2.23
October	15,819	12,854	-18.74	16,100	1.78
November	23,973	23,379	-2.48	25,000	4.28
December	42,589	30,704	-27.91	38,500	-9.60
January	44,941	36,374	-19.06	46,700	3.91
February	30,376	31,412	3.41	34,500	13.58
March	36,170	25,609	-29.20	33,300	-7.93
April	19,292	17,435	-9.63	22,200	15.07
May	12,935	11,033	-14.70	13,200	2.05
June		7,141		8,500	

Source: SG-2. Forms of the reporting utility and the Ohio Division of Energy.

Table B-3: Dayton Power and Light
Forecast of Natural Gas Requirements
(MMCF)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
July	1,503	1,522	1.26	1,600	6.45
August	1,541	1,667	8.18	1,700	10.32
September	1,548	1,634	5.56	1,600	3.36
October	2,343	2,681	14.43	2,600	10.97
November	4,528	4,770	5.34	5,100	12.63
December	6,781	7,068	4.23	7,500	10.60
January	10,545	8,570	-18.73	10,300	-2.32
February	7,817	8,526	9.07	8,000	2.34
March	7,421	5,843	-21.26	6,500	-12.41
April	5,664	5,606	-1.02	5,700	0.64
May	3,051	2,325	-23.80	2,500	-18.06
June		1,504		1,900	

Source: SG-2. Forms of the reporting utility and the Ohio Division of Energy.

Table B-4: East Ohio Gas
Forecast of Natural Gas Requirements
(MMCF)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
July	18,340	19,209	4.74	17,500	-4.58
August	19,347	18,869	-2.47	18,500	-4.38
September	20,770	20,788	0.09	20,000	-3.71
October	25,035	26,601	6.26	26,000	3.85
November	29,703	26,950	-9.27	31,000	4.37
December	46,450	36,229	-22.00	44,900	-3.34
January	48,461	42,181	-12.96	52,100	7.51
February	33,272	37,259	11.98	37,400	12.41
March	40,129	31,978	-20.31	37,800	-5.80
April	31,092	29,370	-5.54	32,500	4.53
May	26,189	25,233	-3.65	23,500	-10.27
June		20,364		19,000	

Source: SG-2. Forms of the reporting utility and the Ohio Division of Energy.

Table B-5: Independent Forecast of Ohio Natural Gas End User Requirements: Residential Sector (MMCF)

Month	Lower 95% Confidence Limit	ODOE Forecast (1984-85)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
July	7,100	7,600	8,100	7,789	-2.4
August	6,200	7,200	8,200	7,005	2.8
September	6,700	7,600	8,500	7,402	2.7
October	10,000	13,000	16,000	12,896	0.8
November	22,000	27,000	32,000	26,978	0.1
December	39,800	45,000	50,200	47,401	-5.1
January	55,000	65,000	75,000	69,695	-6.7
February	51,000	57,000	63,000	61,863	-7.9
March	37,000	46,000	54,000	51,212	-10.2
April	31,500	36,500	41,500	38,993	-6.4
May	11,000	18,000	25,000	21,988	-18.1
June	7,800	9,800	11,800		

Source: ODOE Form SG-1 and the Ohio Division of Energy

Table B-6: Independent Forecast of Ohio Natural Gas End User Requirements: Commercial Sector (MMCF)

Month	Lower 95% Confidence Limit	ODOE Forecast (1984-85)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
July	3,200	3,600	4,000	3,508	2.6
August	3,000	3,400	3,800	3,481	-2.3
September	3,450	3,850	4,250	3,767	2.2
October	4,800	6,000	7,200	5,582	7.5
November	9,000	11,500	14,000	11,725	-1.9
December	16,000	19,000	22,000	20,872	-9.0
January	24,500	28,500	32,500	30,538	-6.7
February	19,000	23,000	27,000	24,405	-5.8
March	16,000	19,000	22,000	22,273	-14.7
April	12,400	16,400	20,400	16,504	-0.6
May	6,500	7,700	8,900	8,990	-14.3
June	4,200	4,800	5,400		

Source: ODOE Form SG-1 and the Ohio Division of Energy

Table B-7: Independent Forecast of Ohio Natural Gas End User Requirements: Industrial Sector (MMCF)

Month	Lower 95% Confidence Limit	ODOE Forecast (1984-85)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
July	5,000	9,000	13,000	11,678	-22.9
August	6,500	11,500	15,500	12,812	-10.2
September	8,000	11,000	14,000	12,607	-12.7
October	9,000	13,000	17,000	15,503	-16.1
November	11,500	16,500	21,500	16,695	-1.2
December	13,000	18,000	23,000	20,184	-10.8
January	17,000	23,000	29,000	22,979	0.1
February	10,000	18,000	26,000	19,460	-7.5
March	11,000	18,000	25,000	19,863	-9.4
April	9,000	15,000	21,000	15,009	-0.1
May	6,000	13,000	20,000	12,161	6.9
June	7,000	12,000	17,000		

Source: ODOE Form SG-1 and the Ohio Division of Energy

Table B-8: Independent Forecast of Ohio Natural Gas
End User Requirements: All Sectors
(MMCF)

Month	Lower 95% Confidence Limit	ODOE Forecast (1984-85)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
July	21,000	31,000	41,000	32,412	-4.4
August	28,000	34,000	40,000	33,661	1.0
September	31,000	37,000	43,000	36,080	2.5
October	33,100	54,600	76,100	49,997	9.2
November	55,000	65,000	75,000	68,668	-5.3
December	95,000	108,500	125,000	114,585	-5.3
January	101,000	120,000	141,000	123,549	-2.9
February	69,000	79,000	89,000	84,756	-6.8
March	78,000	84,000	100,000	99,081	-15.2
April	62,000	72,400	82,000	65,057	11.3
May	36,000	47,700	58,000	44,263	7.8
June	26,000	35,800	46,000		

Source: ODOE Form SG-1 and the Ohio Division of Energy

Table B-9. Projected Supply and Demand for Eight Major Ohio Natural Gas Utilities (MMCF)

COMPANY: CINN. GAS & ELEC.

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	SUMMER	WINTER	YEAR
SUPPLY	3820	2991	2783	2498	2743	4064	7685	11265	12187	10678	8621	5832	24731	50436	75167
DEMAND	3820	2991	2783	2498	2743	4064	7685	11265	12187	10678	8621	5832	24731	50436	75167
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: COLUMBIA GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	SUMMER	WINTER	YEAR
SUPPLY	12408	9933	7482	8175	9202	14392	23379	30704	36374	31412	25609	17435	79027	147478	226505
DEMAND	12408	9933	7482	8175	9202	14392	23379	30704	36374	31412	25609	17435	79027	147478	226505
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: DAYTON POWER & LIGHT

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	SUMMER	WINTER	YEAR
SUPPLY	2829	2064	1636	1766	1856	3099	4770	7068	8570	8526	5843	4608	17858	34777	52635
DEMAND	2829	2064	1636	1766	1856	3099	4770	7068	8570	8526	5843	4608	17858	34777	52635
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: EAST OHIO GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	SUMMER	WINTER	YEAR
SUPPLY	25661	20506	18625	19449	21076	26924	27291	36550	42179	37260	31978	29370	161611	175258	336869
DEMAND	25661	20506	18625	19449	21076	26924	27291	36550	42179	37260	31978	29370	161611	175258	336869
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

Table B-9. Projected Supply and Demand for Eight Major Ohio Natural Gas Utilities (MMCF)

COMPANY: NATIONAL GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	SUMMER	WINTER	YEAR
SUPPLY	1160	1094	1070	1108	1090	1109	1136	1300	1569	1430	1329	1287	7918	6764	14682
DEMAND	1160	1094	1070	1108	1090	1109	1136	1281	1551	1408	1309	1280	7911	6685	14596
DEFICIENCY	0	0	0	0	0	0	0	-19	-18	-22	-20	-7	-7	-79	-86
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-1.5%	-1.2%	-1.6%	-1.5%	-0.5%	-0.1%	-1.2%	-0.6%

COMPANY: OHIO GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	SUMMER	WINTER	YEAR
SUPPLY	327	404	409	229	282	525	662	886	1025	890	736	497	2673	4199	6872
DEMAND	327	404	409	229	282	525	662	886	1025	890	736	497	2673	4199	6872
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: RIVER GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

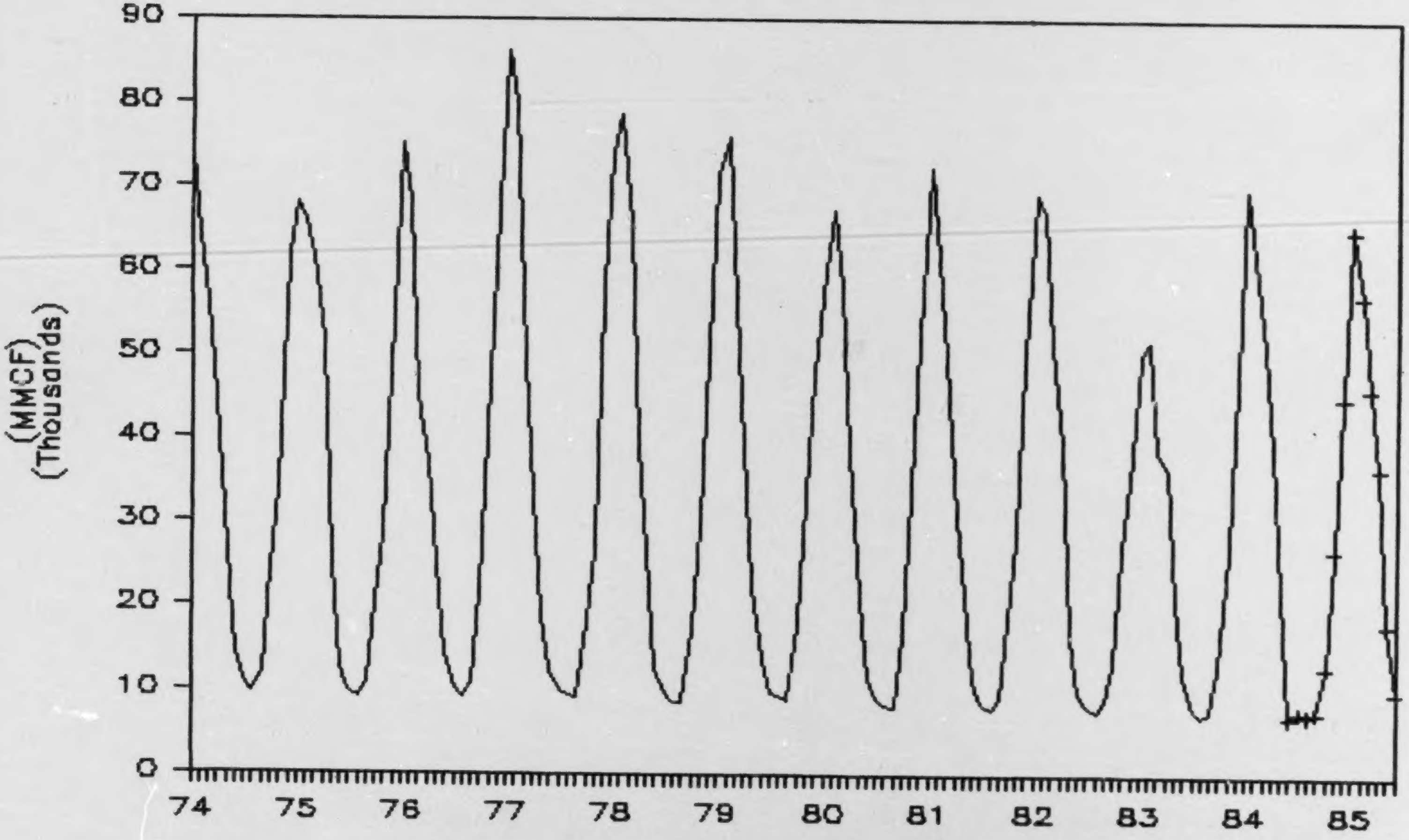
MONTH/YEAR	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	SUMMER	WINTER	YEAR
SUPPLY	206	146	192	200	175	274	385	533	624	553	433	308	1501	2528	4029
DEMAND	206	146	192	200	175	274	385	533	624	553	433	308	1501	2528	4029
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: WEST OHIO GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	5/84	6/84	7/84	8/84	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	SUMMER	WINTER	YEAR
SUPPLY	560	400	324	392	460	776	1130	1393	1828	1694	1361	880	3792	7406	11198
DEMAND	560	400	324	392	460	776	1130	1393	1828	1694	1361	880	3792	7406	11198
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

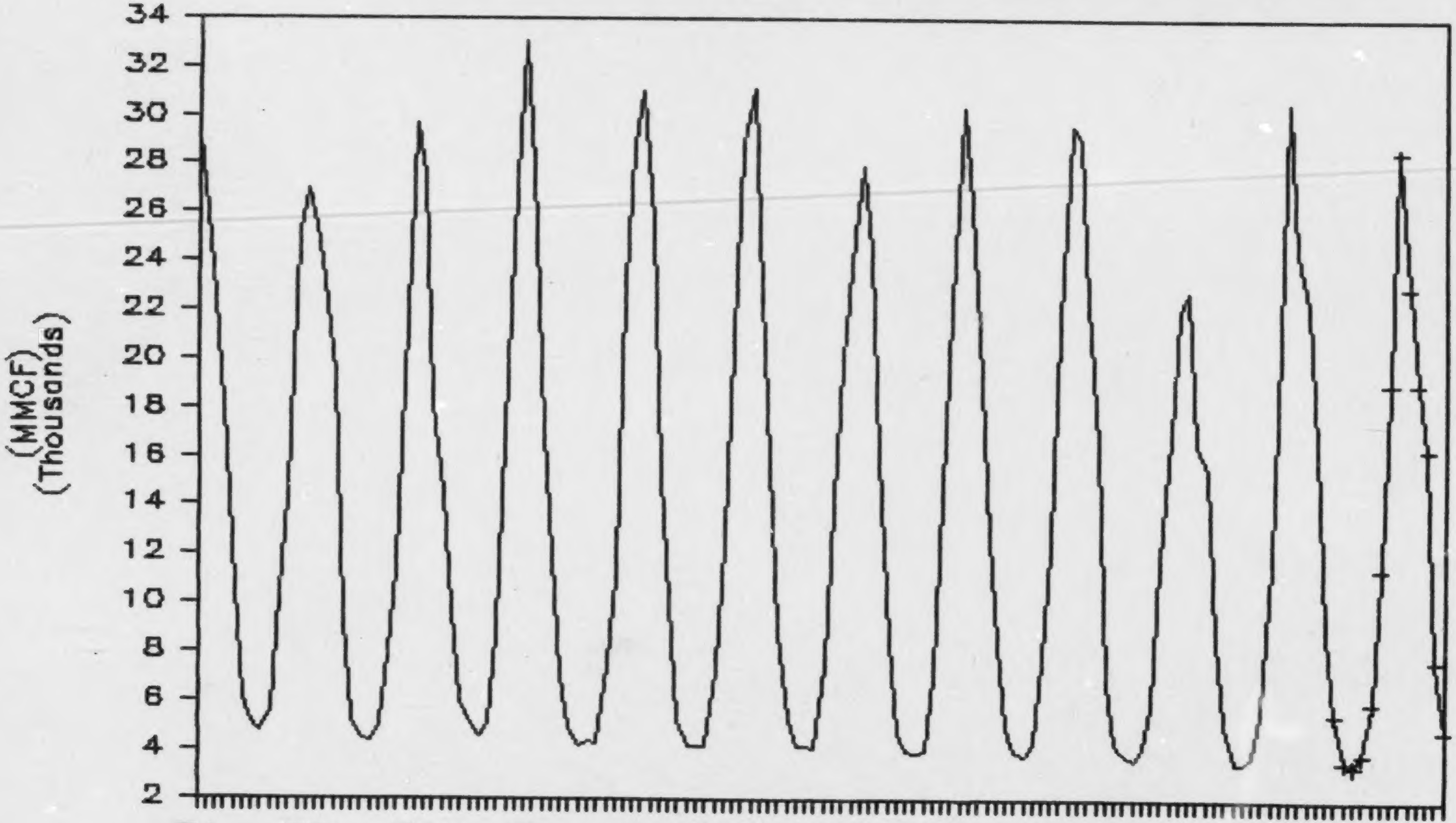
FIG. B-1. MONTHLY OHIO RESIDENTIAL NATURAL GAS CONSUMPTION
ACTUAL AND PROJECTED (JANUARY 1974 - JUNE 1985)



SOURCE: THE OHIO DIVISION OF ENERGY

—— ACTUAL + PROJECTED

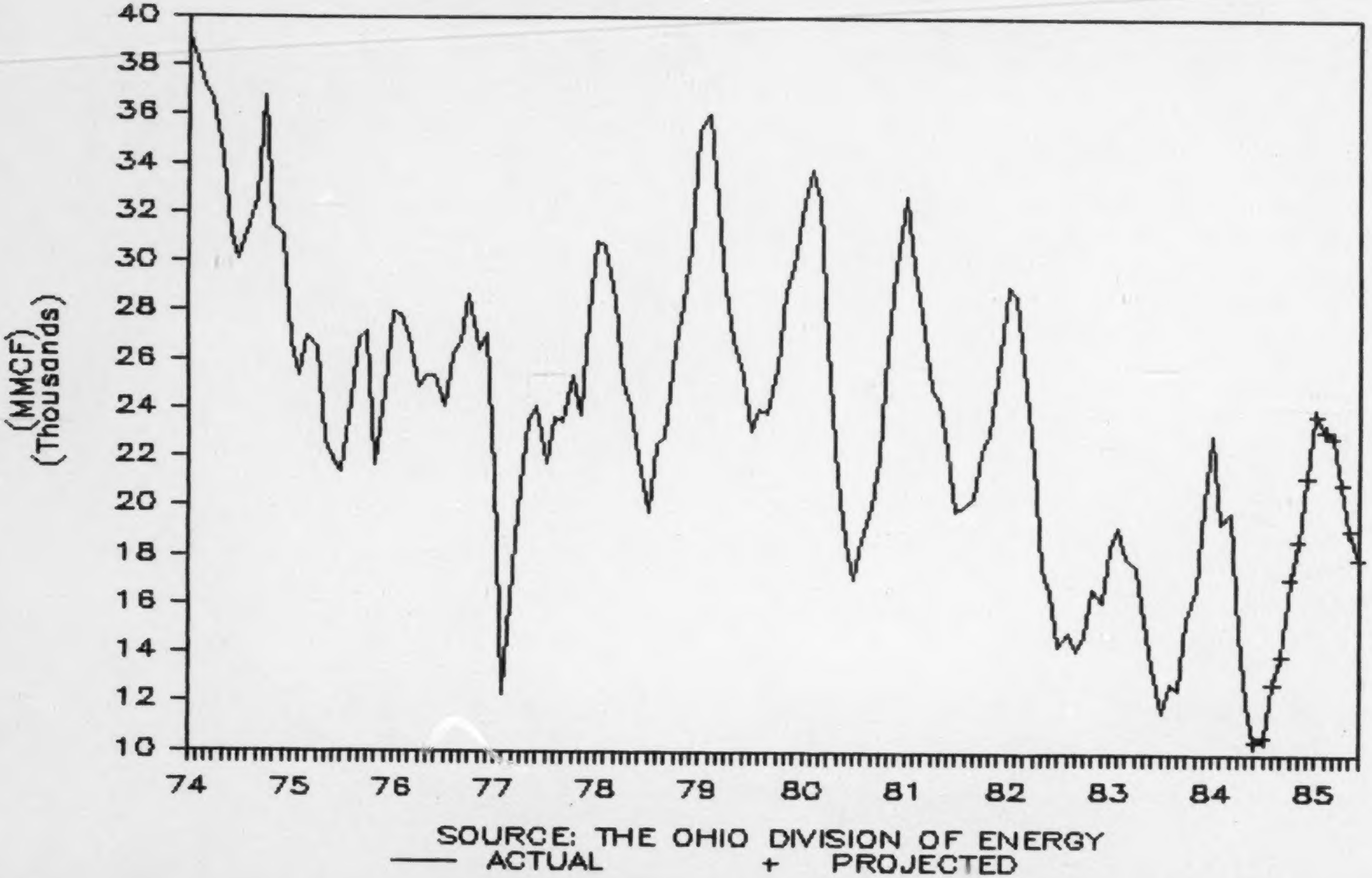
FIG. B-2. MONTHLY OHIO COMMERCIAL NATURAL GAS CONSUMPTION ACTUAL AND PROJECTED (JANUARY 1974 - JUNE 1985)



SOURCE: THE OHIO DIVISION OF ENERGY

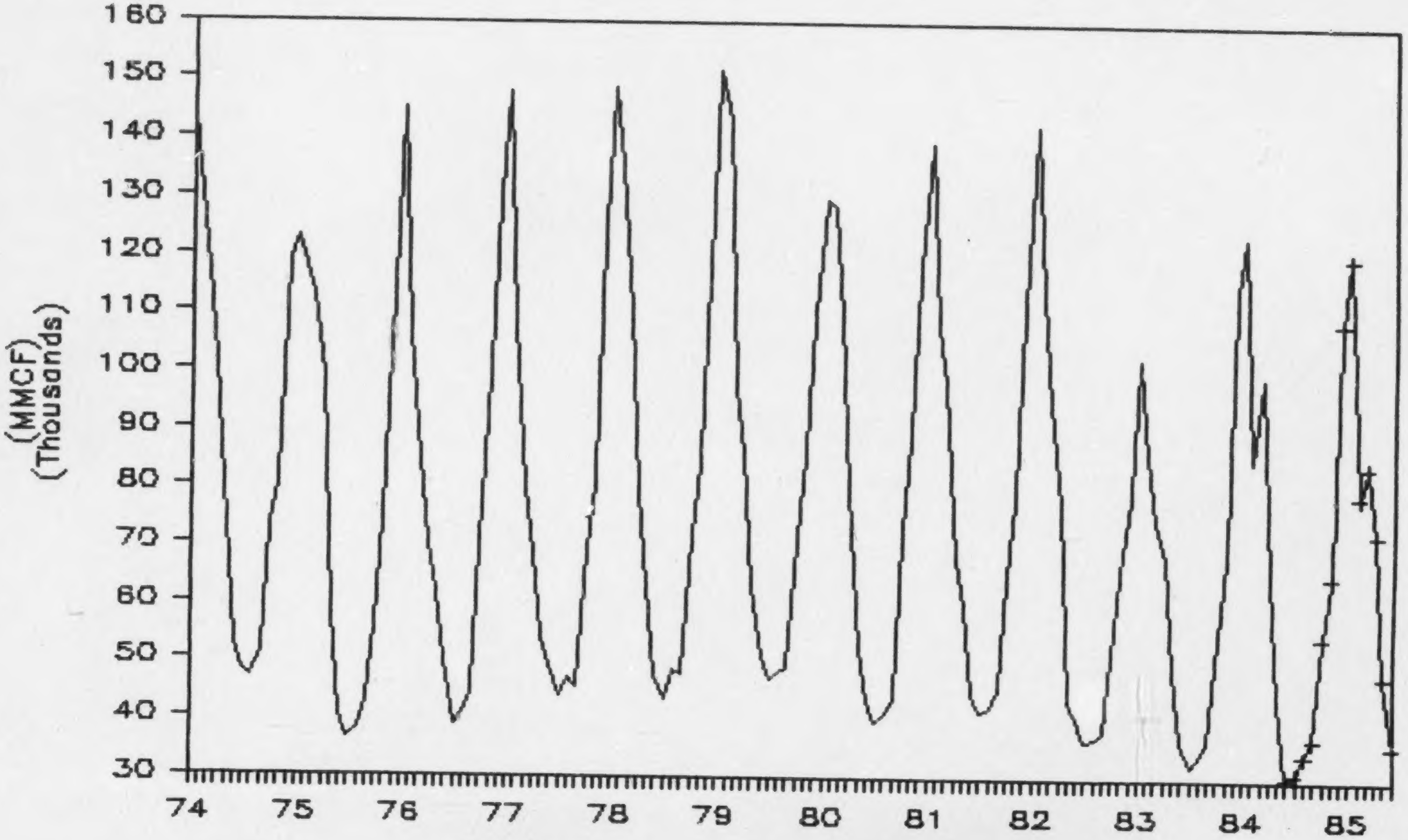
—— ACTUAL + PROJECTED

FIG. B-3. MONTHLY OHIO INDUSTRIAL NATURAL GAS CONSUMPTION
ACTUAL AND PROJECTED (JANUARY 1974 - JUNE 1985)



SOURCE: THE OHIO DIVISION OF ENERGY

FIG. B-4. MONTHLY TOTAL OHIO NATURAL GAS CONSUMPTION
ACTUAL AND PROJECTED (JANUARY 1974 - JUNE 1985)



SOURCE: THE OHIO DIVISION OF ENERGY

—— ACTUAL + PROJECTED

FIG. B-5. ANNUAL OHIO NATURAL GAS CONSUMPTION AND PRICES: RESIDENTIAL SECTOR (1960 -1983)

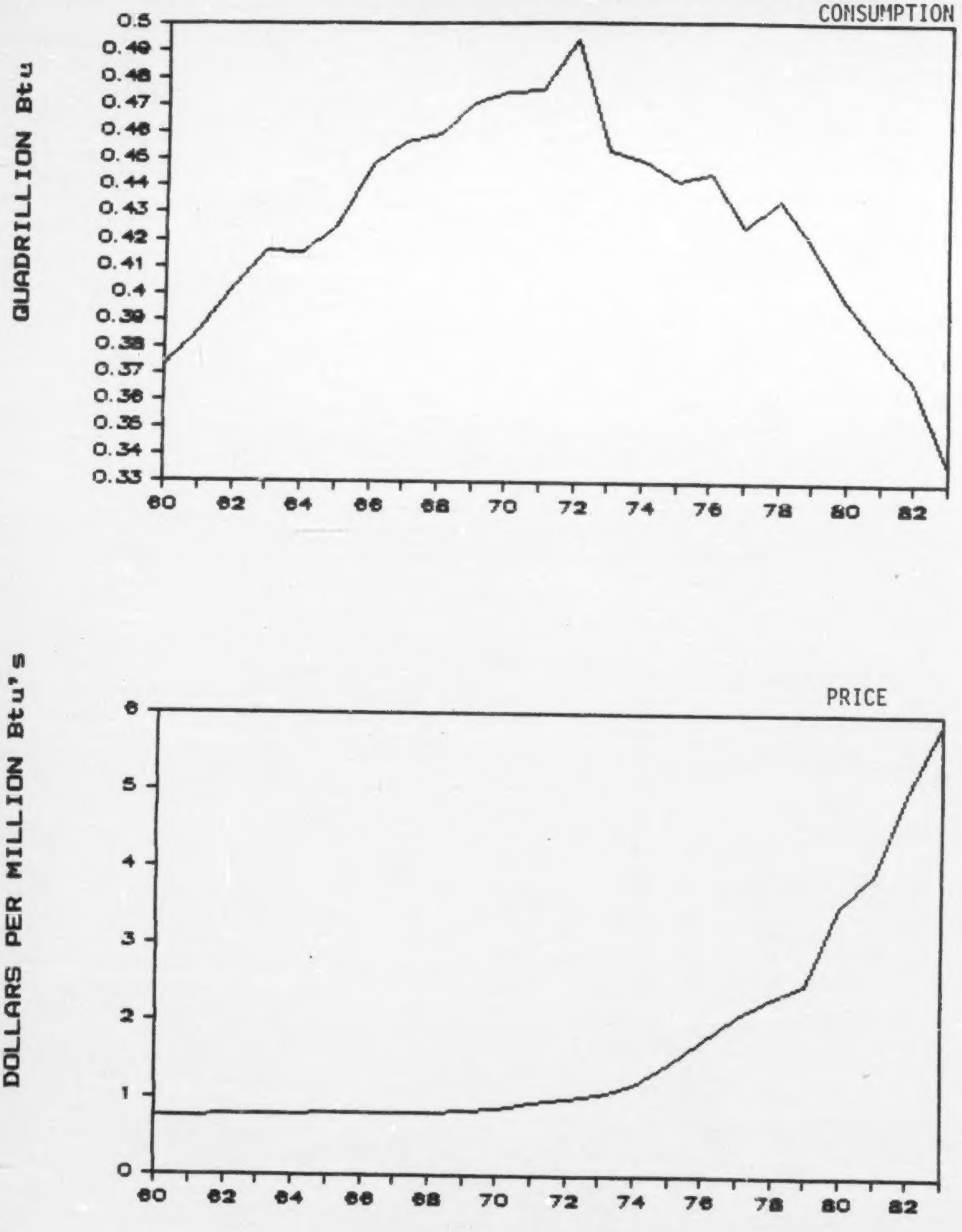


FIG. B-6. ANNUAL OHIO NATURAL GAS CONSUMPTION AND PRICES: COMMERCIAL SECTOR (1960 -1983)

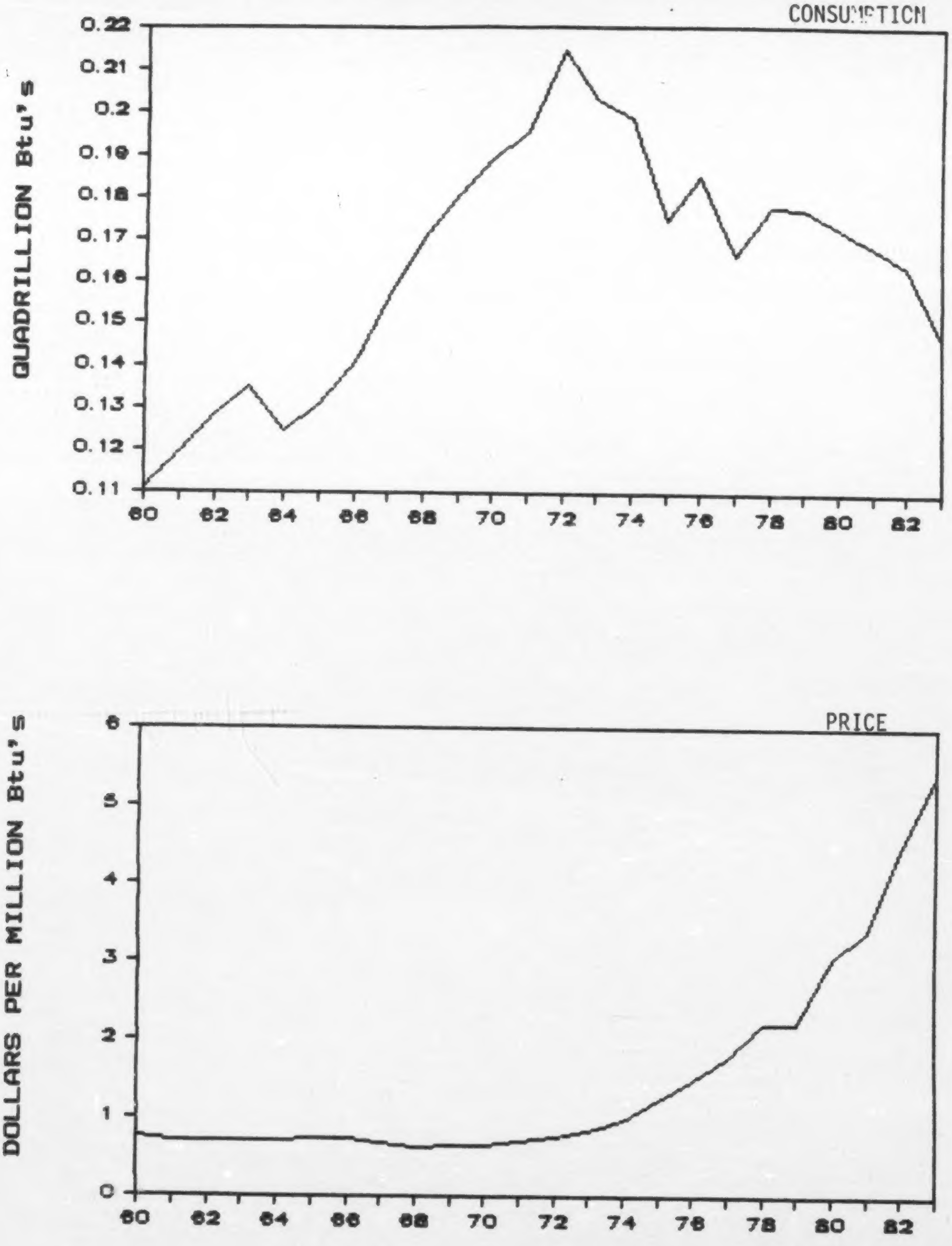


FIG. B-7. ANNUAL OHIO NATURAL GAS CONSUMPTION AND PRICES: INDUSTRIAL SECTOR (1960 -1983)

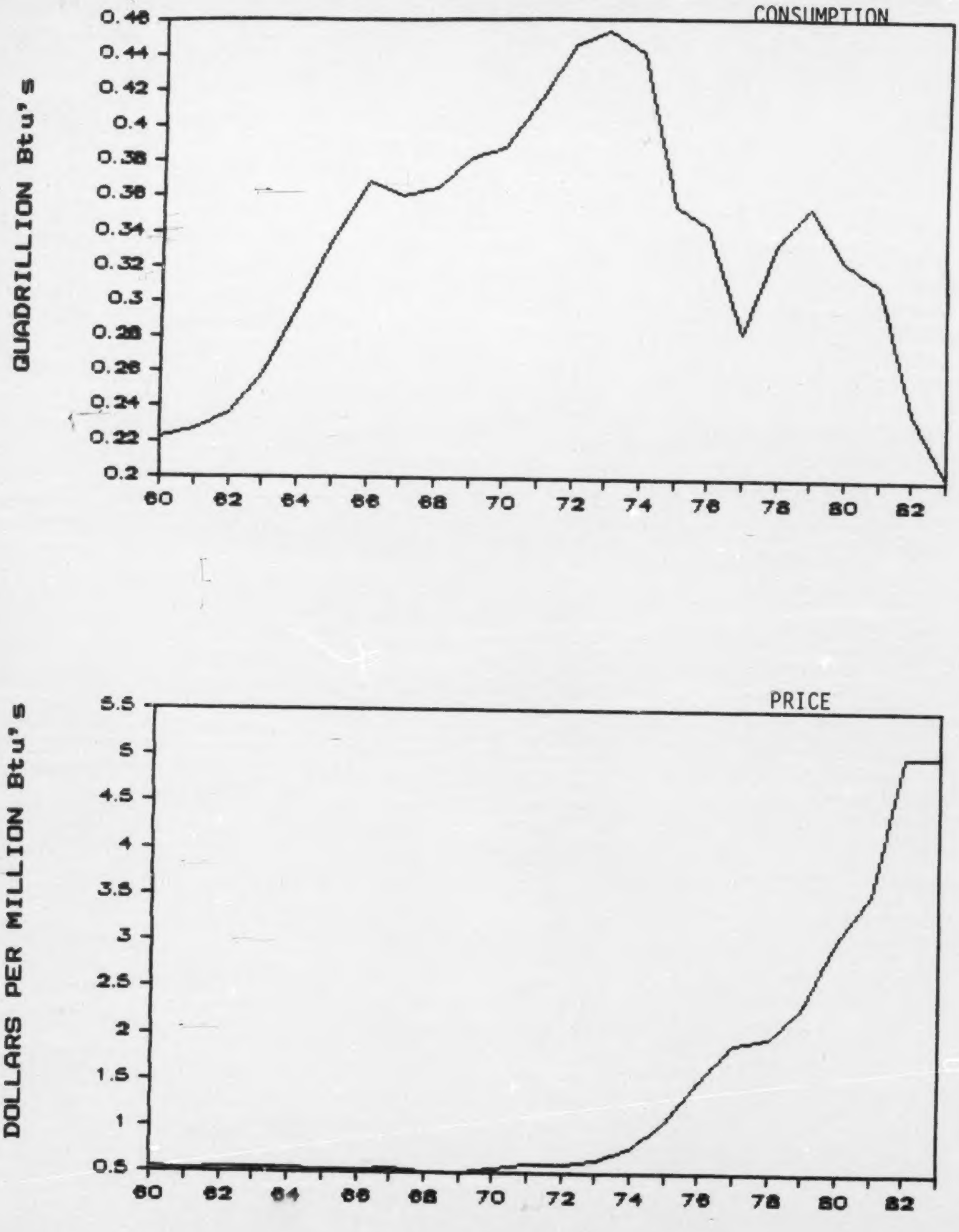
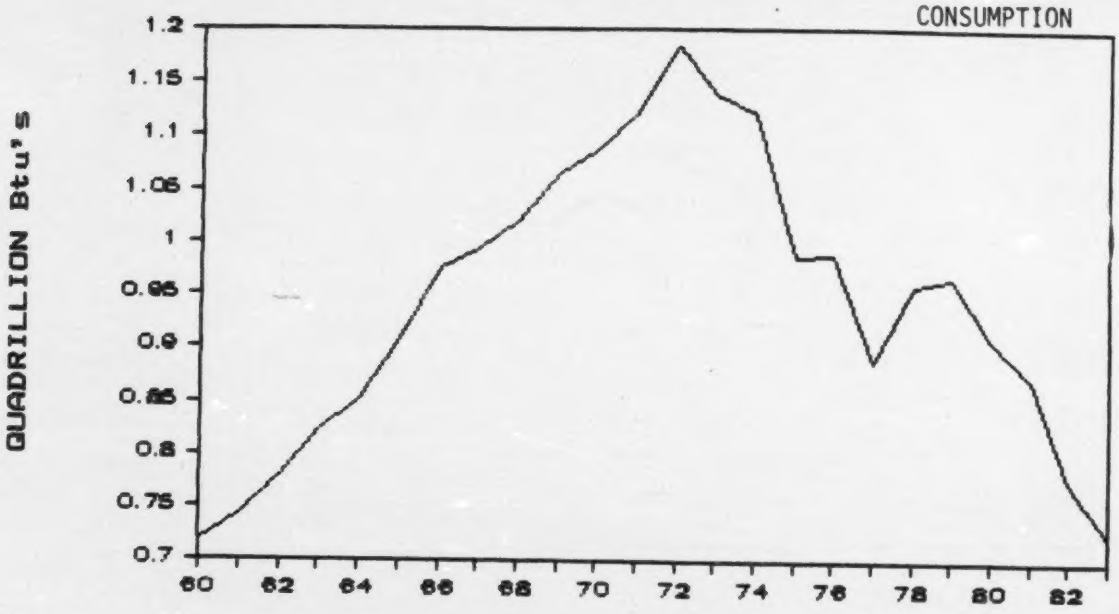


FIG. B-8. MONTHLY OHIO NATURAL GAS CONSUMPTION AND PRICES: TOTAL OF ALL SECTORS (1960 -1983)



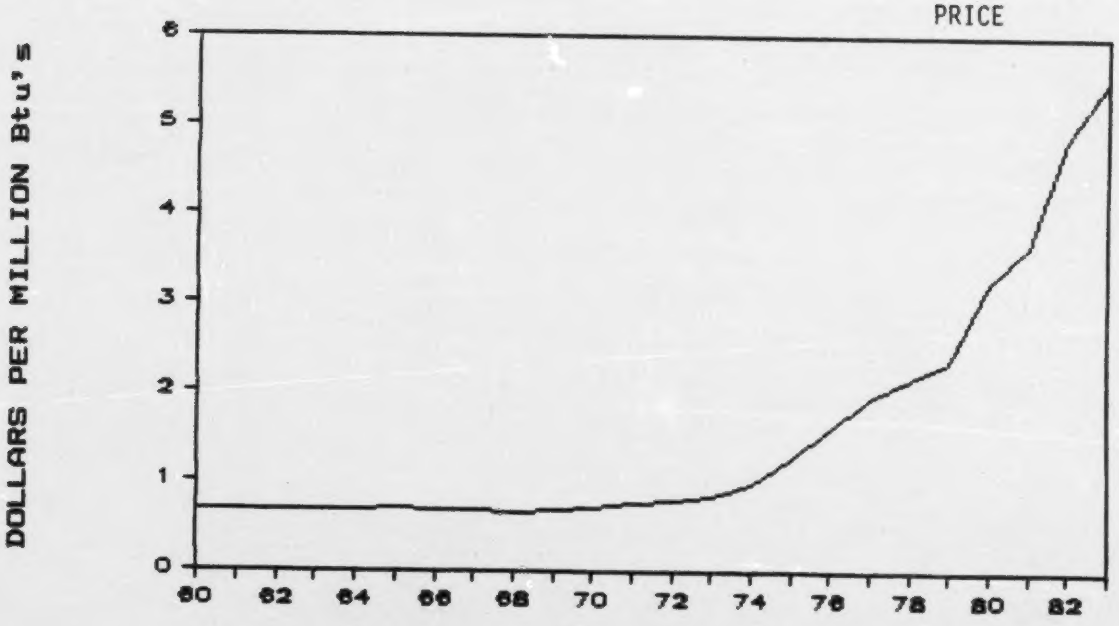
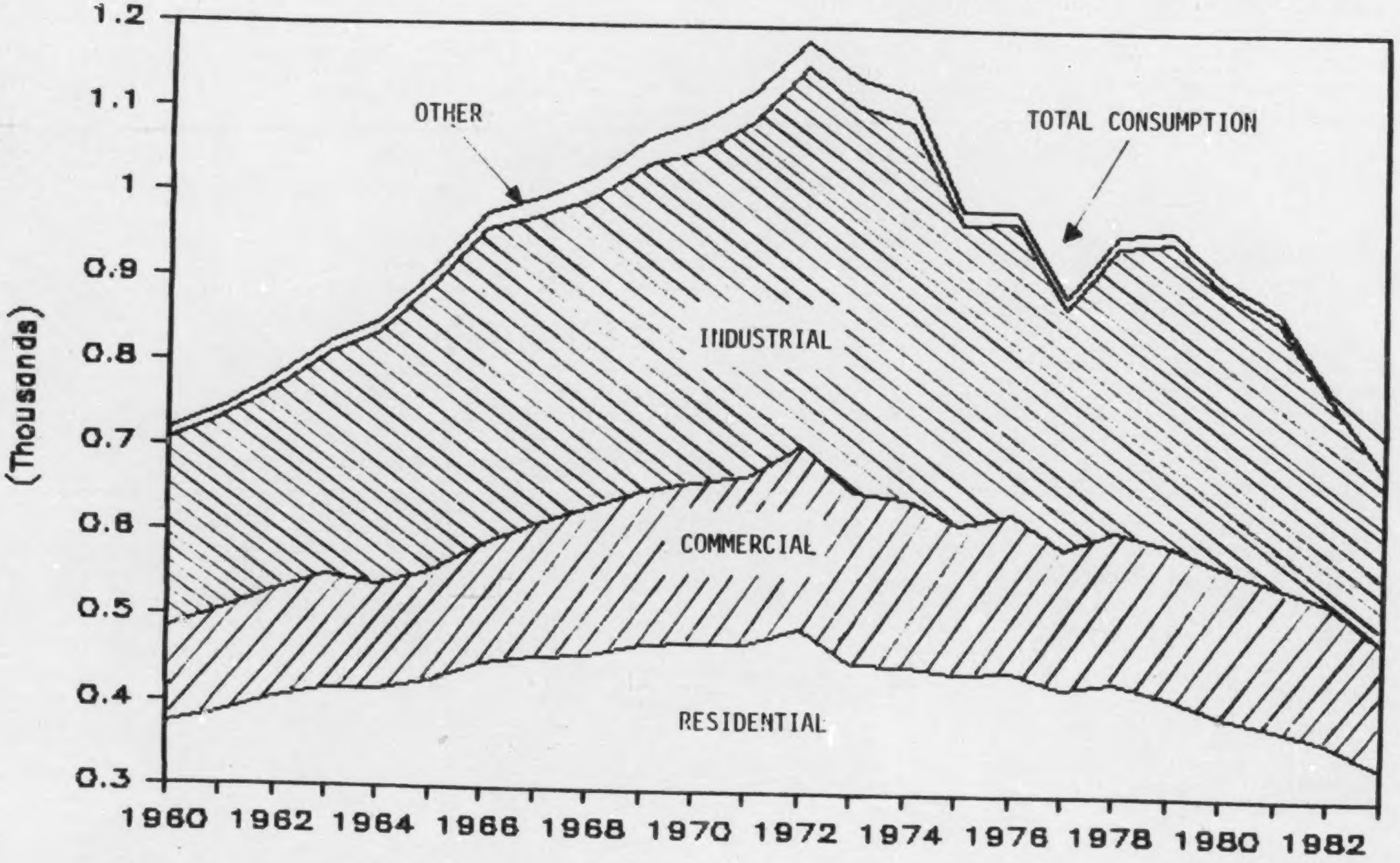


FIG. B-9. ANNUAL OHIO NATURAL GAS CONSUMPTION BY SECTOR



1/25/85 S6260-6(U) A

OHIO DEPARTMENT OF DEVELOPMENT
Division of Energy

State of Ohio
Richard F. Celeste/Governor
Alfred S. Dietzel/Director

An Assessment of the Supplies of Natural Gas and Fuels for Generating Electricity in Ohio

November, 1984 - October, 1985

STATE OF OHIO
Richard F. Celeste, Governor
Alfred S. Dietzel, Director

Department of Development
P.O. Box 1001 • Columbus, Ohio • 43216-1001

December 15, 1984

The Honorable Richard F. Celeste
Governor
Statehouse
Columbus, Ohio 43215

Dear Governor Celeste:

Pursuant to ORC 4905.14, each public electric and gas utility in Ohio is required to file with the Ohio Department of Development, Division of Energy, a report on July and November 1, containing projections of the utility's total demand and fuel supply over the following 12 months. As required by the same statute, we sent copies of the utilities' latest reports to you in November.

The attached report is a summary and analysis of these reports, also required by 4905.14. It includes an evaluation of the Ohio natural gas and electric situation for the coming winter and the next twelve months. It appears at this time that fuel supplies for manufacturing and heating, and for generating electricity will be adequate, even with a 10 percent colder than normal winter and Ohio's increasing industrial activity.

Sincerely,

Alfred S. Dietzel
Director

ASD/kt

cc: William H. Brooks, PUCO, Deputy Chairman
David Johnston, Director, Legislative Service Commission
Harry Meshel, Senate President
Paul Gillmor, Senate Minority Leader
Vern Riffe, House Speaker
Corwin Nixon, House Minority Leader
Ty Marsh, Clerk of the Senate

30 East Broad Street (614) 466-2480

EXECUTIVE SUMMARY

Based on one year forecasts submitted by each of the major electric and natural gas utility companies serving Ohio, and based on independent projections of the Ohio Division of Energy, the supplies of fuels for generating electricity and supplies of natural gas for heating and manufacturing are forecast to be adequate through October 1985. The forecast takes into account the possibility of a 10 percent colder than normal winter and the increased energy demand resulting from accelerating statewide economic recovery.

Supplies of coal, used to generate more than 95 percent of electricity in Ohio, are not expected to fall below a safe two month supply margin for any generating utility company through October 1985.

Supplies of the eight major natural gas distribution companies serving the state are expected to be adequate through October 1985. In addition to the actual delivered product, gas in storage will be sufficient to meet additinal demand in the event of a 10 percent colder than normal winter or strong industrial recovery.

As in past years, roughly fifty percent of the coal supplied to Ohio electric utilities is from out of state sources. Approximately ninety percent of Ohio's natural gas supply will continue to come from out of state sources.

An Assessment of the Supplies of Natural Gas and Fuels for Generating Electricity in Ohio from November 1984 - October 1985

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I. INTRODUCTION

This report has been prepared by the Ohio Department of Development, Division of Energy (ODOE), pursuant to Section 4905.14(E) of the Ohio Revised Code. The statute requires ODOE to provide a summary, analysis and recommendations based on the Ohio public utilities' energy supply and demand projections for the twelve month period beginning November 1, 1984. In accordance with Section 4905.14(D), a copy of each utility's November forecast was submitted to the Governor, the President of the Senate, the Minority Leader of the Senate, the Speaker of the House, the Minority Leader of the House, and the Public Utilities Commission of Ohio on November 9, 1984. The utilities' forecasts and historical data are the primary input for this report. Several other sources of information have also been used, including historical energy data developed by the Ohio Division of Energy, federal energy reports, and publications from the American Gas Association and the Electric Power Research Institute. A substantial and successful effort has been undertaken to develop a comprehensive data base and a consistent and comprehensive analytical methodology which supports the Division of Energy's ability to provide timely analyses and forecasts.

Objectives

Major objectives guiding the preparation of this report are:

1. To provide historical data on energy usage, projections of energy availability and projections of consumption for the coming year.
2. To provide an analysis and an interpretation of short-term changes in energy supply and demand.
3. To provide an assessment of the adequacy of natural gas and electric energy supply for the upcoming twelve months.
4. To provide a strategy to prevent or mitigate any interruption or curtailment of service, if a potential deficiency is identified.

Requirements and Scope of This Report

Utilities are required to file short-term forecast information by Ohio Revised Code Section 4905.14, effective July 1, 1978. The Division prepares a summary and analysis of this information under paragraph (E) of this section.

The municipal utilities, industrial facilities and the rural electric cooperatives are not required to file the semi-annual report. Accordingly, this report incorporates data from the major electric and gas utilities serving the state. The Ohio Division of Energy estimates that in 1983 the major utilities provided approximately 90 percent of the electricity consumed in the state and 92 percent of the natural gas.

Ohio Division of Energy Forecasts

As part of its analysis, the Ohio Division of Energy makes its own independent forecasts to serve as validation checks. The Division has the capability to forecast monthly demand by utility and for the state as a whole within a reasonable level of error (less than five percent in most cases). Such forecasts are based on historical month-by-month actual consumption for both electricity and natural gas and other appropriate variables such as population, income, and temperature data. As in any forecast, certain important socio-economic conditions are assumed in the independent forecasts. These assumptions are:

1. Energy consumption generally follows its historical pattern.
2. Socio-economic changes have a minimal effect on short-run energy consumption.

Overview of This Report

The report is divided into two parts: electric energy and natural gas. Materials presented in these two parts are, for the most part, parallel in arrangement. They contain:

(a) a profile of reporting utilities;
(b) historical sources of supplies and suppliers;
(c) consumption history by sector, utility, and state;
(d) the utilities' forecasts and independent forecasts by the Ohio Division of Energy.

Temperature and Energy Consumption

Changes in the observed annual energy requirements of the three major consuming sectors (industrial, commercial, residential) may be explained by a variety of factors. Temperature is a variable which explains much of the observed variation. It is particularly significant in the residential and commercial sectors, during summer and winter periods, when electricity and natural gas are used to maintain comfortable room temperatures.

Two indicators which measure temperature-sensitive energy requirements are heating degree days and cooling degree days. The daily mean temperature is obtained by adding together the maximum and minimum temperatures reported for the day and dividing the total by two. When the daily mean temperature is 65° F, the degree day total is zero. Each degree of mean temperature below 65° F is counted as one heating degree day. This indicator is convenient because the amount of heat required to maintain a certain temperature level is proportional to heating degree days.

The cooling degree days are defined similarly: Each degree of mean temperature above 65° F is counted as one cooling degree day. If the daily mean temperature is 65° F or lower, the cooling degree day total is zero.

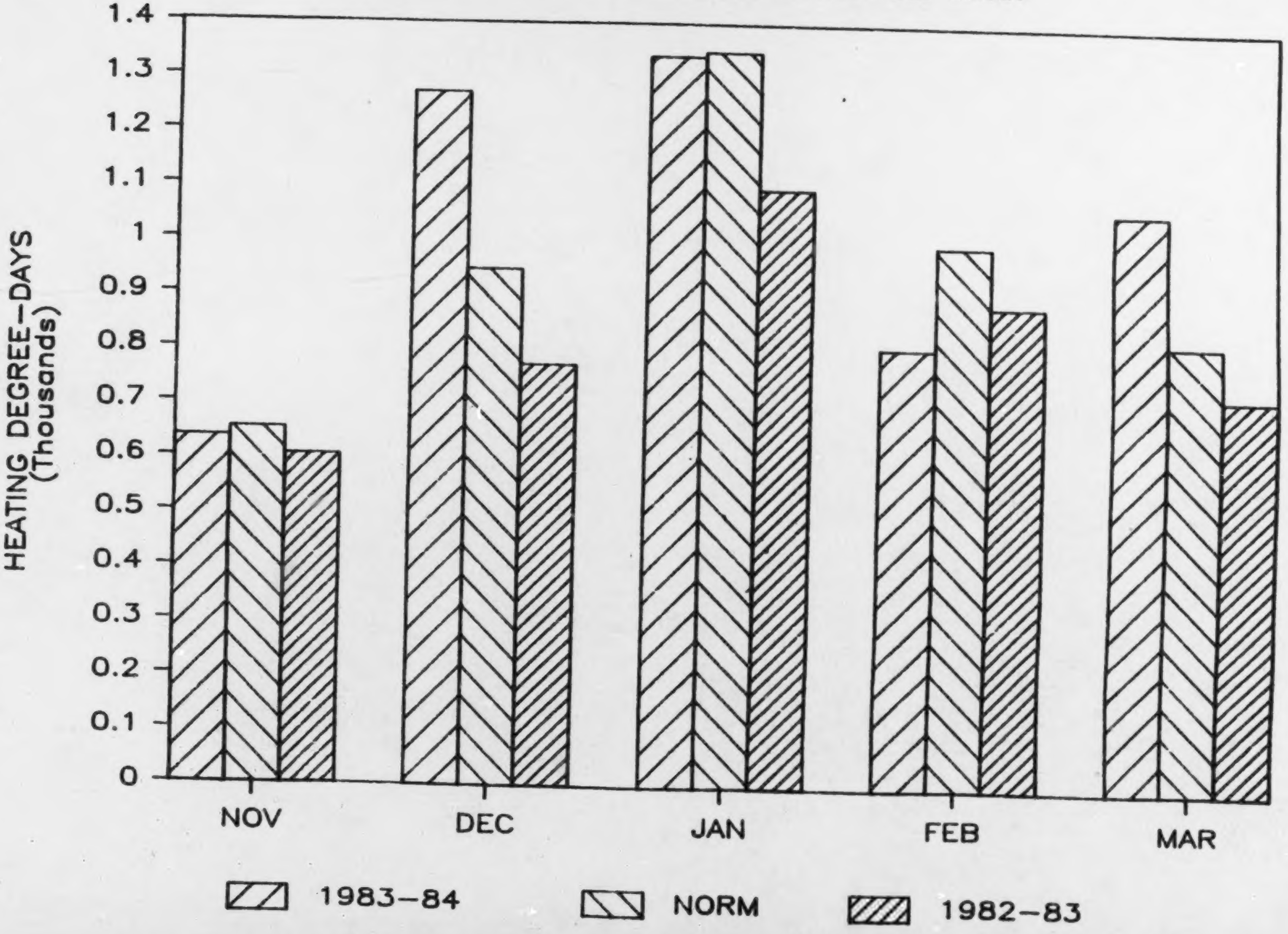
Since most homes and commercial buildings in Ohio are heated by natural gas, the reporting gas utilities are required to submit supply and demand forecasts under a normal winter scenario and a 10 percent colder than normal winter scenario. In addition, the relationship between natural gas consumption and heating degree days is closely monitored during the winter heating season (from November through March). Table 1 and Figure 1 show, for the past two heating seasons, population-weighted state heating degree day summaries. In addition, a normal heating degree day series, defined as the 30-year average of the years 1941 to 1970, is also presented.

TABLE 1. POPULATION-WEIGHTED HEATING DEGREE-DAY SUMMARY FOR OHIO
MARCH 1984

MONTH	1983-1984	NORM	1982-1983
NOVEMBER	638	654	606
DEVIATION FROM NORM	-2.5%		-7.3%
DEVIATION FROM PREVIOUS YEAR	5.3%		-4.1%
DECEMBER	1272	948	774
DEVIATION FROM NORM	34.2%		-18.4%
DEVIATION FROM PREVIOUS YEAR	64.3%		-20.3%
JANUARY	1341	1350	1099
DEVIATION FROM NORM	-0.7%		-18.6%
DEVIATION FROM PREVIOUS YEAR	22.0%		-28.4%
FEBRURARY	809	997	888
DEVIATION FROM NORM	-18.9%		-10.9%
DEVIATION FROM PREVIOUS YEAR	-8.9%		-16.7%
MARCH	1062	822	726
DEVIATION FROM NORM	29.2%		-11.7%
DEVIATION FROM PREVIOUS YEAR	46.3%		-11.9%

SOURCE: National Oceanic and Atmospheric Administration, Historical Climatology Series 5-1 and the Ohio Division of Energy.

FIG. 1. POPULATON-WEIGHTED DEGREE-DAYS FOR OHIO WINTER HEATING SEASONS (1982 AND 1983)



II. ELECTRICITY

This section is based on the November forecasts filed by nine major Ohio electric utilities. Two of these, Columbus and Southern Ohio Electric Company and Ohio Power Company, are subsidiaries of the American Electric Power Company. Since American Electric Power operates as a centrally dispatched, integrated distribution system, the report reviews forecasts of demand and fuel adequacy for the entire American Electric Power Company. The Allegheny Power System is also a centralized power generation and distribution system. One subsidiary Monongahela Power, operates in Ohio. Thus, the forecasts of eight utilities are presented in the report. They are:

1. Allegheny Power System (APS)
    - Monongahela Power
    - Other out-of-state utilities not subject to reporting
2. American Electric Power Company (AEP)
    - Columbus and Southern Ohio Electric Company (C&SOE)
    - Ohio Power Company (OP)
    - Other out-of-state utilities not subject to reporting
3. Cincinnati Gas and Electric Company (CG&E)
4. Cleveland Electric Illuminating Company (CEI)
5. Dayton Power and Light Company (DP&L)
6. Ohio Edison Company (and its subsidiary Pennsylvania Power) (OE)
7. Ohio Valley Electric Corporation (OVEC)
8. Toledo Edison Company (TE)

With the exception of OVEC, each of these is an investor-owned utility supplying electricity to residential, commercial, and industrial customers in its service areas. The Ohio Valley Electric Corporation is a single-customer utility supplying power for the uranium enrichment plant at Piketon, Ohio. It also sells surplus generation to other electric utilities.

Supply and Generation

Source/Supplier of Fuel for Electric Generation

Fuels used in Ohio for electric generation include coal, oil, natural gas and nuclear fuel. Nuclear fuel sources are not monitored by the Division. All other fuels are monitored through the utilities' monthly reports. Tables 2 and 3 (following) list coal and oil deliveries to power plants located in Ohio. The main sources of supply and/or suppliers of these fuels remain the same as in the last reporting period.

Coal deliveries to Ohio electric plants during the twelve months ending August 1984, increased by 8,297,900 tons from the previous twelve month period, an increase of 20.7 percent (Table 2 and Figure 2). Deliveries of oil to Ohio power plants increased by 141,900 barrels during the twelve months ending August 1984 from the previous twelve month period, an increase of 36.4 percent (Table 3 and Figure 3). The increase in coal and oil deliveries is in part, attributable to increased generation over the previous twelve month period. They also reflect the utilities' preemptive stockpiling in response to an anticipated coal strike in September 1984 which did not take place.

Electric Generation by Type of Fuel

Coal remains the main source of fuel for electric generation in Ohio, a condition which is not expected to change in the future. In the twelve month period ending August 1984, 95.4 percent of the total electricity generated in Ohio was from coal. Electricity generated by gas and oil continues to be a negligible 0.1 percent of total generation. Nuclear-generated electricity accounted for 4.5 percent of electricity generated in the state in the twelve months ending August 1984. From April through August 1982, Davis-Besse was inoperative due to a shut down for maintenance. It began generating electricity in September 1982 and was off line for refueling in July 1983. Operations resumed in September 1983. It is currently off line for refueling. Operations are expected to resume in late December 1984.

Table 4 and Figure 4 show the combined monthly totals of the reporting utilities' net generation from Ohio plants. Historical power plant fuel consumption and fuel stocks are displayed in Table 5.

Historical Behavior of Sectoral Requirements

Since the OPEC oil price increases of 1973 and 1978 and the subsequent escalations in inflation and energy prices, the pattern of electricity consumption in Ohio has changed dramatically. Increasing electricity prices and decreasing rates of growth of real income have stimulated conservation activities and fostered economic conditions that have resulted in reduced growth rates in the demand for electricity.

Electricity consumption by the residential and commercial sectors exhibits regular seasonal patterns while the industrial sector fluctuates widely with general economic conditions. (See Appendix A). The mild winter of 1982-83 resulted in decreased residential sector consumption, particularly during the months of January through March (Table 6 and Figure 5A). The relatively severe weather of December 1983 and March 1984 resulted in increased residential consumption. In December 1982, industrial electricity consumption dipped lower than any consumption level since January 1971. A severe downturn in the manufacturing sector, particularly in automobile-related industries, had resulted in a monthly industrial demand level of 3100 to 3400 megawatt-hours. Beginning in 1983 with the general economic recovery, industrial demand for electricity has gradually increased. The March consumption of 4020 megawatt-hours is the highest monthly industrial consumption since March 1981.

For the twelve month period ending in August 1984, total electricity consumption in the state was 11.1 percent higher than during the preceding twelve month period (see Table 6 and (Figures 5A, 5B). Comparing 1982-83 with 1983-84 usage, residential sector consumption rose 5.8 percent, commercial sector consumption rose 5.6 percent and industrial sector consumption rose 19.9 percent. Figure 5E is a comparison of the monthly electricity consumption for each sector, from January 1971 to August 1984.

Twelve Month Electricity Demand Forecasts

Each electric utility submits a forecast of total service area demand for November 1984 through October 1985. These forecasts are displayed in Appendix A, Tables A-1 through A-8, along with independent forecasts prepared by the Ohio Division of Energy. The Ohio Division of Energy also prepares independent twelve month forecasts of electricity demand for the state of Ohio, by sector. These forecasts are displayed in Appendix A, Tables A-9 through A-12.

Electric Demand Forecasts by Utility Service Area

The Ohio Division of Energy utility service area forecasts are based on monthly data from utility reports from January 1971 through August 1984. No independent forecast is provided for OVEC, because this utility has only one customer whose demand is pre-arranged. Because of the overlapping months for utility forecasts submitted on July 1 and November 1, the utilities may elect to use their previous forecasts for those overlapping months in the new forecasting period.

Cincinnati Gas and Electric, Columbus and Southern Ohio Electric, Dayton Power and Light, Ohio Edison, and Ohio Power retained their forecasts submitted in July for the months November 1984 through June 1985. Four utilities adjusted their forecasts. Both Cleveland Electric Illuminating and Toledo Edison raised their November and December forecasts, (2.7% and 0.4% respectively) while retaining the previous forecast for the first six months of 1985. Appalachian Power System and Ohio Valley Electric Corporation raised the forecast for each month an average of 2.1% and 3.4% respectively.

The forecasts prepared by ODOE have been revised since July. The ODOE forecast for each month is generally higher than the corresponding forecast of Allegheny Power System, Cincinnati Gas and Electric, and Ohio Edison. American Electric Power, Cleveland Electric Illuminating, Dayton Power and Light, and Toledo Edison have submitted forecasts that are higher than ODOE's forecast for some months and lower than ODOE's forecast for some months. (See Appendix A). The differences between ODOE forecasts and the utilities' forecasts were investigated in a number of cases. In the majority of cases so investigated the differences in question were found to be not statistically significant.

Assessment of Utility Fuel Adequacy

Tables 7-A and 7-B present the utilities' projections of deliveries, consumption, and end-of-month stocks of coal and oil for the generation of electricity. Table 7-C presents the Division's independent assessment of the adequacy of supply of generating fuels. The Division's projections are presented for the CAPCO Group of utilities, which include Cleveland Electric Illuminating, Ohio Edison, and Toledo Edison; for the American Electric Power and Allegheny Power Systems, and for Dayton Power and Light, Cincinnati Gas and Electric, and the Ohio Valley Electric Corporation.

Coal

The Division's projections, as well as those of the electric utilities indicate an adequate supply of coal throughout the forecast period for each utility serving the state.

To derive the Ohio Division of Energy projections, average daily requirements of coal were determined by dividing projected monthly coal consumption by the number of days in the month. End-of-month stocks were derived by considering consecutively end of September 1984 stocks, projected monthly coal delivery schedules as submitted by the utilities, and projected monthly coal consumption levels. Number of days' supply of coal was estimated on the basis of average daily requirements in subsequent months and the level of end-of-month stocks for the month in question.

Coal consumption projections were made through the use of a formula which adjusts coal consumption levels for changes in the consumption of oil, natural gas, and nuclear fuel in a manner that is consistent with the projected demand or net energy for load. In making these projections, it is assumed that the following conditions will be satisfied:

1. Monthly demand (net energy for load) for November 1984 through September 1985 will be realized in the manner projected by the utility companies.
2. Energy required to supply projected net energy for load in a given month from November 1984 through October 1985 will be proportional to the energy consumed in supplying the actual net energy for load in the previous twelve month period.
3. Monthly delivery schedules for all fuels in 1984 and 1985 will be met in the manner projected by the utility companies.

4. With the exception of Toledo Edison, all of the electricity required to meet the net energy for load projection will be generated by coal.

Oil

Each electric utility forecasts an adequate supply of oil for the generation of electricity throughout the forecast period. The decline in oil usage in Ohio has resulted in net generation from oil of less than 1% of total net generation. Currently oil is being used as a start-up fuel and in peaking units. Due to the currently high reserve margins for all utilities, the Division does not anticipate that the utilities will generate much electricity from peaking units and consequently our projections indicate that there will be an adequate supply of oil, under normal generating conditions.

TABLE 2. SOURCE OF COAL SUPPLY TO ELECTRIC UTILITIES
OHIO PORTION
1000 Short Tons

Month	1	2	3	4	6	7&8	9	Other	Total
1982									
January	0.0	128.4	23.9	2,019.3	222.7	1,097.7	103.7	200.2	3,795.9
February	0.0	123.0	19.4	2,137.4	388.2	1,187.4	51.2	191.7	4,098.3
March	0.0	173.4	27.9	2,303.4	382.9	1,505.2	56.7	237.9	4,687.4
April	0.0	136.9	37.3	2,031.0	237.3	1,457.9	109.8	168.8	4,179.0
May	0.0	109.5	40.3	1,554.9	200.8	1,058.5	28.6	150.8	3,143.4
June	0.7	121.7	31.0	1,976.6	170.0	1,090.1	97.3	134.0	3,620.7
July	0.0	139.0	12.5	1,537.3	126.3	590.8	76.4	131.8	2,614.1
August	0.0	134.7	4.3	1,998.6	317.3	1,299.2	79.6	178.7	4,012.4
September	0.0	139.2	36.4	1,982.4	285.8	1,094.8	67.5	184.8	3,790.9
October	0.0	173.4	7.1	1,879.1	346.1	859.7	77.6	64.4	3,407.4
November	0.0	205.9	33.1	1,973.1	306.1	1,202.3	118.2	58.2	3,896.9
December	0.0	136.0	42.3	1,770.8	297.8	1,106.2	100.2	161.4	3,614.7
Total	0.7	1,721.1	315.5	23,163.9	3,281.3	13,549.8	966.8	1,862.7	44,861.1
% of Total	.0	3.8	0.7	51.6	7.3	30.2	2.2	4.2	100.0
1983									
January	0.0	105.8	37.9	1,865.6	292.9	938.4	62.2	239.7	3,542.5
February	0.0	76.0	25.0	1,608.6	291.9	793.3	9.0	102.1	2,905.9
March	0.0	109.1	9.1	1,274.6	349.9	973.2	5.8	98.7	2,820.4
April	0.0	85.5	14.7	1,438.8	240.0	685.5	12.0	0.0	2,476.5
May	0.0	166.3	26.7	1,937.3	264.2	1,003.2	4.4	1.5	3,403.6
June	0.0	160.7	38.0	1,945.5	140.5	991.0	29.9	6.3	3,311.9
July	0.0	172.4	37.5	1,792.4	73.6	872.4	58.7	0.0	3,007.0
August	0.0	267.1	56.6	2,172.1	185.5	1,234.3	48.7	4.4	3,968.7
September	0.0	222.5	47.0	2,039.4	216.5	1,056.5	7.8	0.0	3,589.7
October	0.0	199.5	31.9	2,084.5	282.7	1,079.5	0.0	0.0	3,678.1
November	0.0	207.6	21.5	1,961.4	267.1	1,113.0	37.0	4.8	3,612.4
December	0.0	155.9	25.6	1,895.0	270.6	1,188.1	143.3	0.0	3,678.5
Total	0.0	1,928.4	371.5	22,015.2	2,875.4	11,928.4	418.8	457.5	39,995.2
% of Total	0.0	4.8	0.9	55.0	7.2	29.8	1.0	1.1	100.0
1984									
January	0.0	196.9	36.0	2,144.9	310.4	1,272.5	46.1	0.0	4,006.8
February	0.0	211.7	42.4	2,337.8	384.1	1,302.1	40.2	0.0	4,318.3
March	0.0	258.9	62.5	2,499.4	387.1	1,170.7	59.1	0.0	4,437.7
April	0.0	206.8	44.3	2,248.9	466.3	1,064.3	16.4	0.0	4,047.0
May	0.0	194.5	19.2	2,451.0	374.9	1,273.0	0.0	0.0	4,312.6
June	0.0	176.2	28.1	2,173.4	382.0	1,217.1	15.2	0.0	3,992.0
July	0.0	185.7	33.1	2,360.1	170.2	1,229.6	19.8	0.0	3,998.5
August	0.0	190.9	27.5	2,523.7	493.2	1,537.4	0.0	0.0	4,772.7

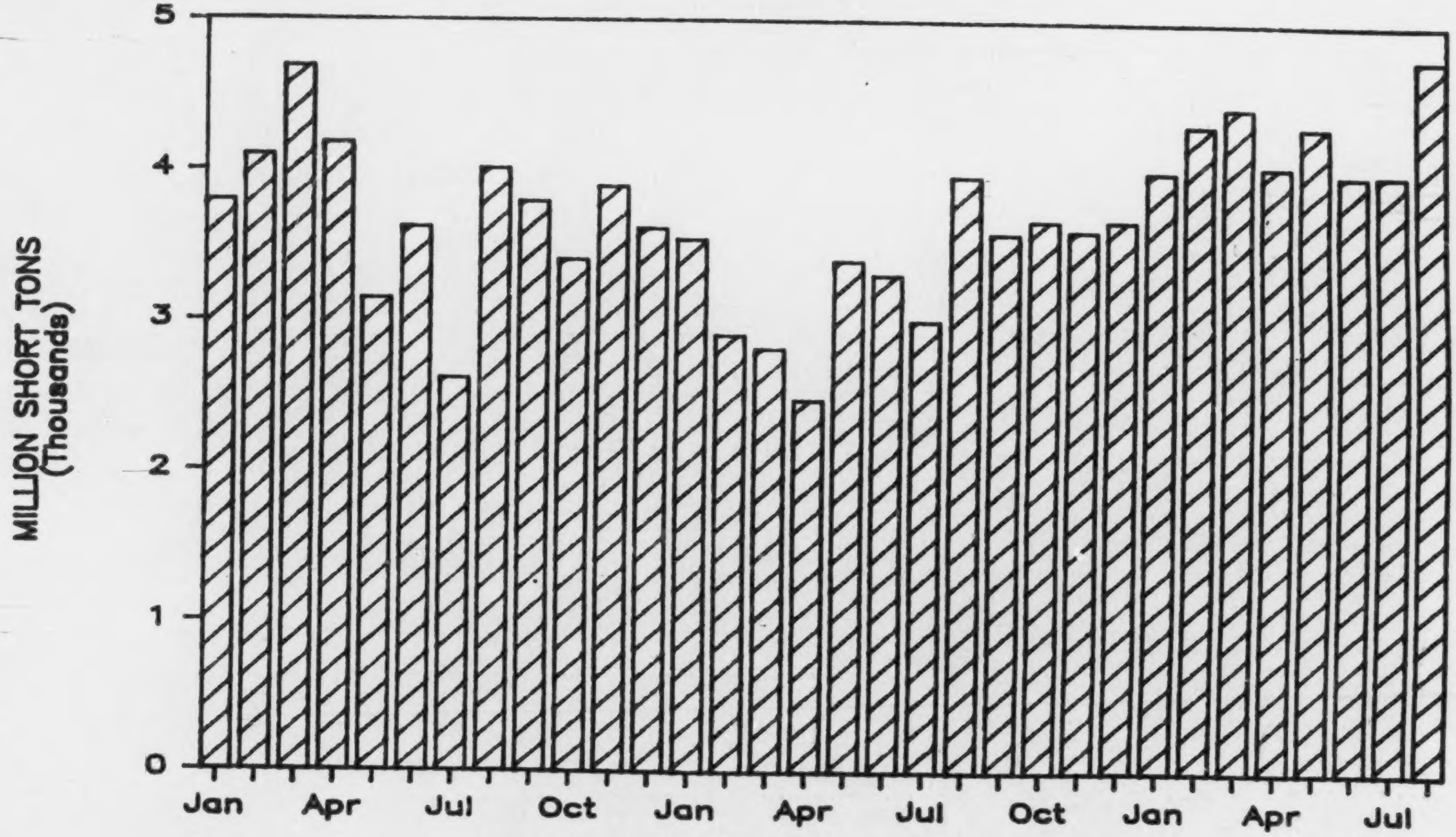
District

1. Eastern Pennsylvania
2. Western Pennsylvania
3. Northern West Virginia
4. Ohio
6. Panhandle (in West Virginia)
7. Southern No. 1 (in West Virginia and Virginia)
8. Southern No. 2 (in West Virginia and Eastern Kentucky)
9. Western Kentucky

Other - Primarily from Wyoming and Utah

Source: Form FPC 423

FIG. 2. MONTHLY COAL DELIVERIES TO POWER PLANTS IN OHIO
(JANUARY 1982 - AUGUST 1984)



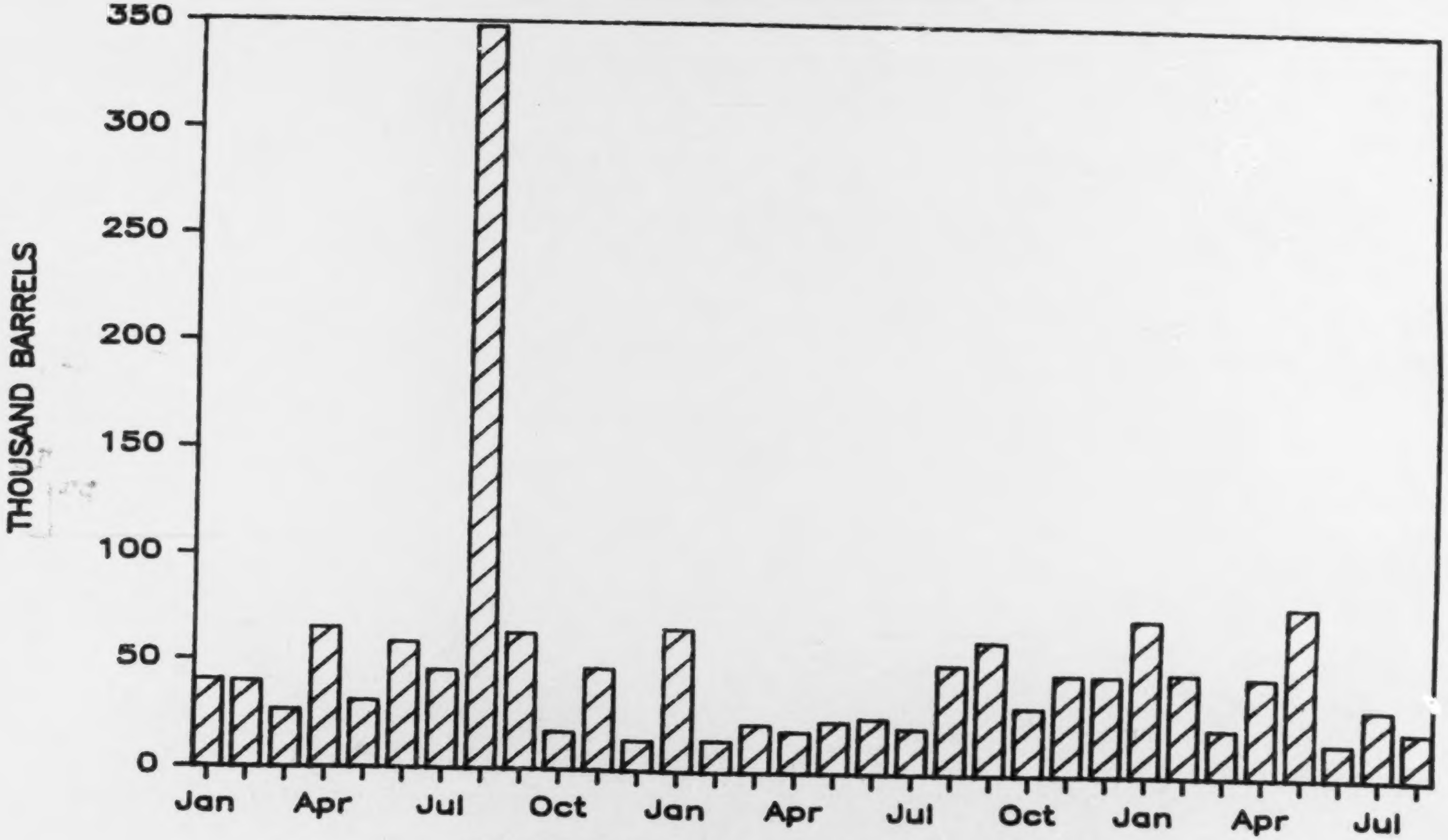
SOURCE: THE OHIO DIVISION OF ENERGY

Table 3. Major Oil Suppliers to Electric Utilities
Ohio Portion
(Thousand Barrels)

1982	Allied	Marathon	Standard	Union	Other	Total
January	35.9	0.2	2.8	1.8	0.0	40.7
Feburary	34.7	0.2	2.3	2.9	0.0	40.1
March	21.8	0.0	3.4	1.5	0.0	26.7
April	62.8	0.0	1.8	0.9	0.0	65.5
May	26.8	0.0	2.3	2.2	0.0	31.3
June	50.6	0.0	6.5	1.8	0.0	58.9
July	35.7	0.2	7.9	2.3	0.0	46.1
August	140.2	0.0	204.6	2.8	0.0	347.6
September	58.5	0.6	3.4	1.2	0.0	63.7
October	13.5	0.0	2.5	1.7	0.0	17.7
November	42.2	0.0	2.5	3.0	0.0	47.7
December	9.4	0.0	1.9	2.8	0.0	14.1
Total	532.1	1.2	241.9	24.9	0.0	800.1
% of Total	66.5	0.1	30.2	3.1	0.0	100.0
1983						
January	36.5	18.1	9.1	3.0	0.0	66.7
Feburary	7.3	0.2	5.2	2.0	0.0	14.7
March	7.0	0.6	11.1	2.0	2.0	22.7
April	6.8	0.2	9.5	2.0	1.0	19.5
May	9.2	0.4	8.5	4.0	2.1	24.2
June	10.9	0.0	11.0	4.0	0.0	25.9
July	11.5	0.2	6.7	3.0	0.0	21.4
August	38.8	0.4	4.0	3.0	5.2	51.4
September	52.4	0.2	5.1	0.0	4.9	62.6
October	14.0	0.4	14.6	1.0	1.7	31.7
November	35.7	0.2	6.1	3.0	2.6	47.6
December	18.4	0.0	16.2	2.0	10.5	47.1
Total	508.6	20.9	90.9	27.0	19.5	666.9
% of Total	76.3	3.1	13.6	4.0	2.9	100.0
1984						
January	66.0	0.2	2.4	3.0	2.0	73.6
February	38.9	0.4	2.8	1.0	5.2	48.3
March	12.8	0.4	4.5	2.0	2.7	22.4
April	40.6	3.3	0.0	0.0	2.9	46.8
May	70.6	0.6	4.5	1.0	3.6	80.3
June	11.6	0.6	3.4	0.0	0.6	16.2
July	21.5	0.2	6.7	1.0	3.1	32.5
August	12.5	0.6	4.4	0.0	5.0	22.5

Source: Form FPC 4 and the Ohio Division of Energy

FIG. 3. MONTHLY OIL DELIVERIES TO POWER PLANTS IN OHIO
(JANUARY 1982 - AUGUST 1984)



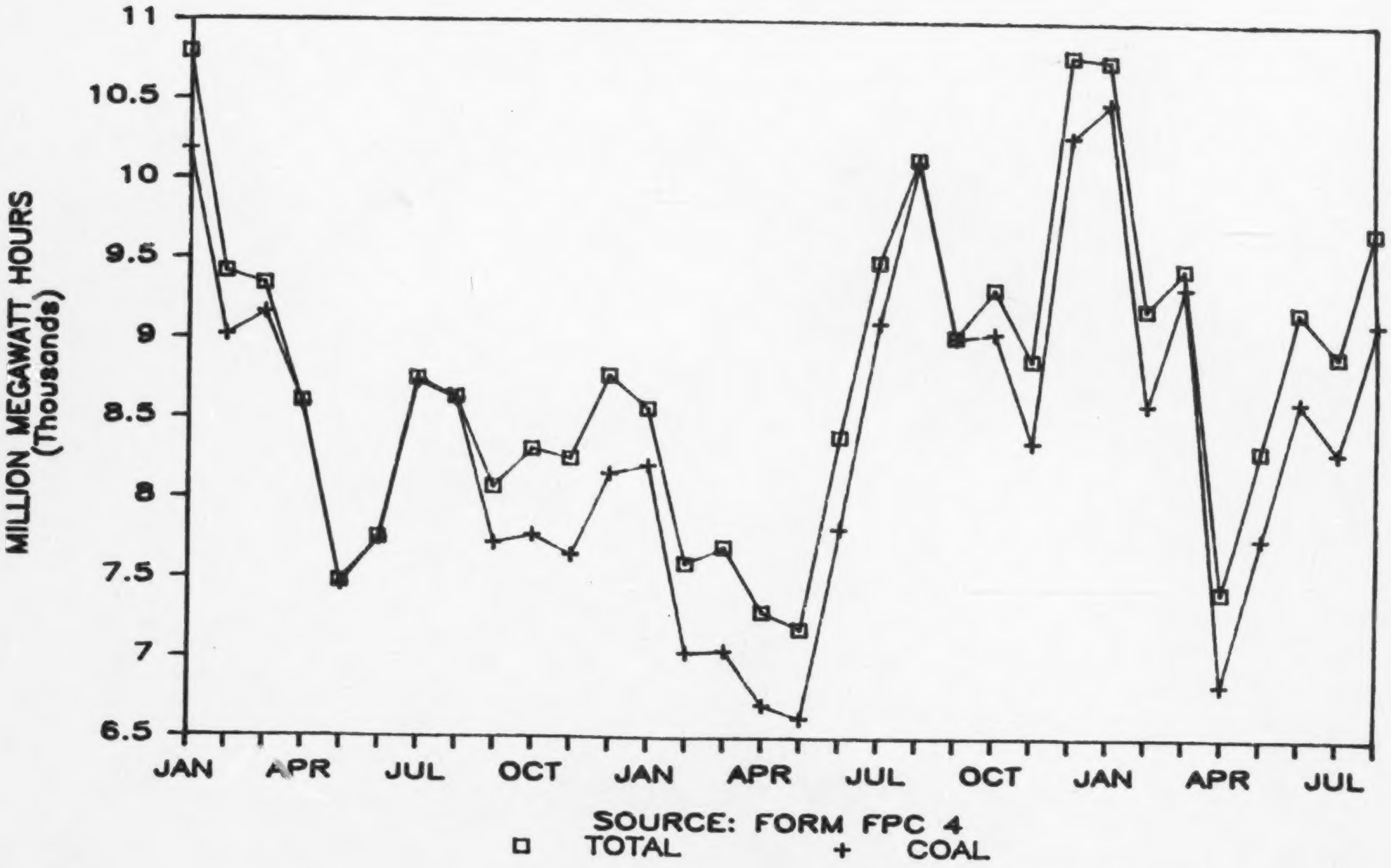
SOURCE: THE OHIO DIVISION OF ENERGY

Table 4. Major Ohio Utilities - Net Generation by Types of Fuel (Ohio Portion) (Thousand MWH)

1982	COAL	OIL	GAS	NUCLEAR	TOTAL
January	10194	27	3	576	10800
February	9026	6	2	386	9420
March	9170	8	3	165	9346
April	8593	14	3	0	8610
May	7464	13	3	0	7480
June	7750	6	0	0	7756
July	8741	11	5	0	8757
August	8627	12	3	0	8642
September	7726	8	1	343	8078
October	7778	2	1	537	8318
November	7653	2	0	604	8259
December	8165	0	0	615	8780
Total	100887	109	24	3226	104246
% of Total	96.78	0.10	0.02	3.09	100.00
1983					
January	8219	-3	1	357	8574
February	7041	-1	0	560	7600
March	7055	1	1	647	7704
April	6716	8	1	574	7299
May	6630	4	-9	567	7192
June	7822	7	2	567	8398
July	9114	9	4	370	9497
August	10124	16	3	0	10143
September	9023	5	1	0	9029
October	9054	5	1	271	9331
November	8368	6	4	506	8884
December	10290	14	4	487	10795
Total	99456	71	13	4906	104446
% of Total	95.22	0.07	0.01	4.70	100.00
1984					
January	10503	9	4	249	10765
February	8608	2	0	596	9206
March	9344	4	2	111	9461
April	6847	4	1	579	7431
May	7771	3	1	546	8321
June	8632	6	1	556	9195
July	8316	16	1	586	8919
August	9122	6	1	569	9698

Source: Form FPC 4 and the Ohio Division of Energy

FIG. 4. NET GENERATION BY TYPE OF FUEL,
OHIO PORTION OF MAJOR OHIO ELECTRIC UTILITIES
(JANUARY 1982 - AUGUST 1984)



SOURCE: FORM FPC 4

Table 5. Major Ohio Utilities
Fuel Consumption and Stocks
(Ohio Portion)

	Coal (Thousand Tons)		Oil (Thousand 42-Gal. Bbls.)		Gas (MMCF)
1982	Burned	In Stock	Burned	In Stock	Burned
January	4,629.5	9,351.6	147.9	735.8	119.0
February	4,334.6	9,241.2	71.1	721.3	59.0
March	4,072.6	9,866.8	67.0	723.1	68.0
April	3,832.1	10,153.7	74.1	762.0	73.0
May	3,191.5	10,304.0	75.0	698.4	38.0
June	3,412.2	10,762.3	78.7	733.2	23.0
July	4,023.2	9,239.8	61.8	755.0	25.0
August	3,880.1	9,147.0	74.2	716.6	85.0
September	3,494.3	9,630.0	51.9	779.2	35.4
October	3,453.1	9,814.9	55.7	744.3	34.0
November	3,271.3	9,563.6	72.1	1,456.5	35.4
December	3,591.4	10,082.9	36.5	1,074.5	24.7
Total	45,185.9	117,157.8	866.0	9,899.9	619.5
Avg/Month	3,765.5	9,763.2	72.2	825.0	51.6
1983					
January	3,582.2	9,807.8	51.1	1,470.5	45.5
February	3,068.6	9,694.0	43.5	1,468.1	17.0
March	3,076.2	9,378.9	39.7	1,468.5	42.5
April	2,920.4	9,649.2	48.8	624.9	39.6
May	2,851.0	10,308.8	52.9	410.6	25.6
June	3,347.7	10,363.6	45.3	386.0	68.6
July	3,953.3	9,440.7	57.7	378.4	86.5
August	4,416.1	9,038.8	64.0	365.0	76.5
September	3,902.5	8,567.9	38.2	324.8	22.8
October	3,934.2	8,458.8	41.0	385.0	33.0
November	3,623.0	8,502.4	48.9	408.6	75.8
December	4,561.6	7,487.1	75.3	326.3	81.8
Total	43,236.8	110,698.0	606.4	8,016.7	615.2
Avg/Month	3,603.1	9,224.8	50.5	668.1	51.3
1984					
January	4,635.1	6,913.0	58.3	396.7	76.0
February	3,756.3	7,364.0	54.3	390.5	14.0
March	4,113.5	7,793.7	16.6	397.7	56.1
April	2,977.2	8,445.0	34.8	388.6	44.7
May	3,362.8	9,761.1	44.3	449.5	35.3
June	3,726.9	10,164.8	42.9	450.7	53.2
July	3,667.3	10,541.4	42.0	441.3	37.8
August	3,951.9	11,400.6	47.0	418.7	14.8

Source: Form FPC 4 and the Ohio Division of Energy

Table 6. Ohio Electricity Consumption
September 1982 - August 1984
(Thousand MWH)

	September	October	November	December	January	February	March	April	May	June	July	August	Total
Residential													
1983-84	2604.2	1935.6	2177.7	2727.2	3491.7	2890.9	2771.2	2448.2	2111.4	2190.4	2349.8	2465.8	30164.1
1982-83	2052.2	1943.4	2113.9	2527.4	2909.8	2725.6	2390.5	2378.3	2016.9	2023.7	2603.0	2817.6	28502.3
% Change	26.9	-0.4	3.0	7.9	20.0	6.1	15.9	2.9	4.7	8.2	-9.7	-12.5	5.8
Commercial													
1983-84	2060.0	1716.0	1677.7	1850.2	2048.1	1901.8	1889.0	1711.5	1701.9	1924.5	2013.1	2098.7	22592.5
1982-83	1805.8	1673.0	1624.5	1743.6	1838.6	1778.8	1739.6	1661.4	1604.0	1758.9	2047.1	2125.4	21400.7
% Change	14.1	2.6	3.3	6.1	11.4	6.9	8.6	3.0	6.1	9.4	-1.7	-1.3	5.6
Industrial													
1983-84	3616.3	3606.7	3554.0	3446.8	3707.8	3718.9	4020.3	3927.2	4005.8	3991.7	3809.4	3998.6	45403.5
1982-83	3107.5	3014.8	2910.7	2779.2	2921.2	3102.7	3301.5	3201.3	3342.5	3374.8	3280.9	3542.1	37879.2
% Change	16.4	19.6	22.1	24.0	26.9	19.9	21.8	22.7	19.8	18.3	16.1	12.9	19.9
Other													
1983-84	432.0	412.5	444.3	480.8	497.7	425.7	424.1	380.5	372.6	397.9	398.7	411.1	5077.9
1982-83	395.0	424.7	441.4	469.2	487.2	451.5	450.6	399.4	386.0	404.8	410.2	437.6	5157.6
% Change	9.4	-2.9	0.7	2.5	2.2	-5.7	-5.9	-4.7	-3.5	-1.7	-2.8	-6.1	-1.5
Total													
1983-84	8712.5	7670.8	7853.7	8505.0	9745.3	8937.3	9104.6	8467.4	8191.7	8504.5	8571.0	8974.2	103230.0
1982-83	7360.5	7055.9	7090.5	7519.4	8156.8	8058.6	7882.2	7640.4	7349.4	7562.2	8341.2	8922.7	92939.0
% Change	18.4	8.7	10.8	13.1	19.5	10.9	15.5	10.8	11.5	12.5	2.8	0.6	11.1
Customers (1000's)													
Residential	3469.2	3474.3	3478.3	3485.3	3490.2	3493.5	3496.1	3496.2	3492.9	3489.7	3486.7	3487.8	41840.1
Commercial	356.3	356.6	355.5	355.7	356.4	356.1	355.7	356.2	357.2	357.4	352.8	358.1	4274.1
Industrial	24.8	24.8	25.0	25.1	25.2	25.4	25.5	25.8	25.8	25.9	26.0	26.1	305.5
Total	3850.3	3855.7	3858.8	3866.1	3871.8	3875.0	3877.3	3878.1	3876.0	3873.0	3865.5	3872.0	46419.6

Source: The Ohio Electric Utility Institute: Monthly Summaries
and ODOE Form SE-1

FIG. 5A. OHIO RESIDENTIAL SECTOR ELECTRICITY CONSUMPTION
(1982 - 1983 VS. 1983 - 1984)

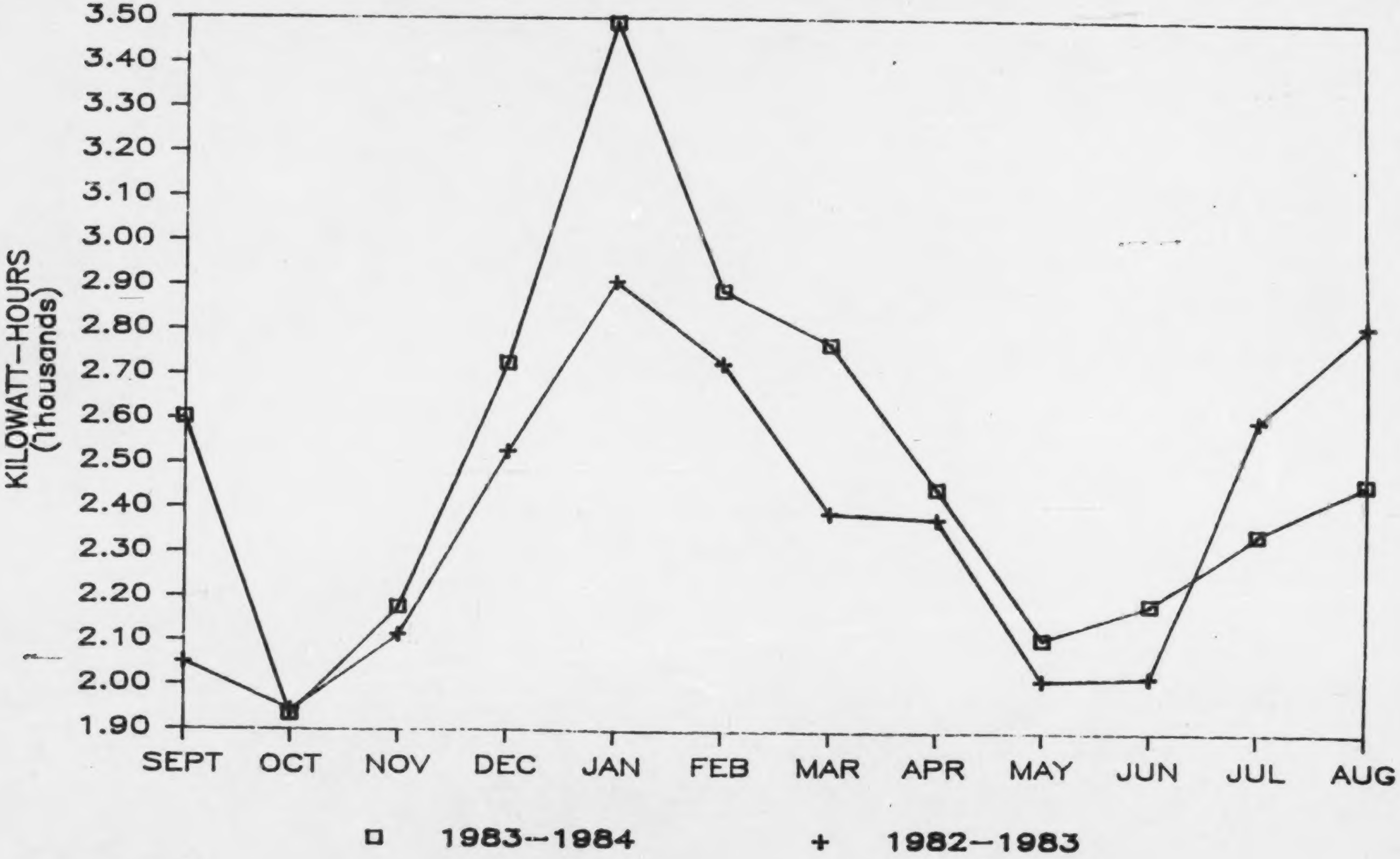


FIG. 5B. OHIO COMMERCIAL SECTOR ELECTRICITY CONSUMPTION
(1982 - 1983 VS. 1983 - 1984)

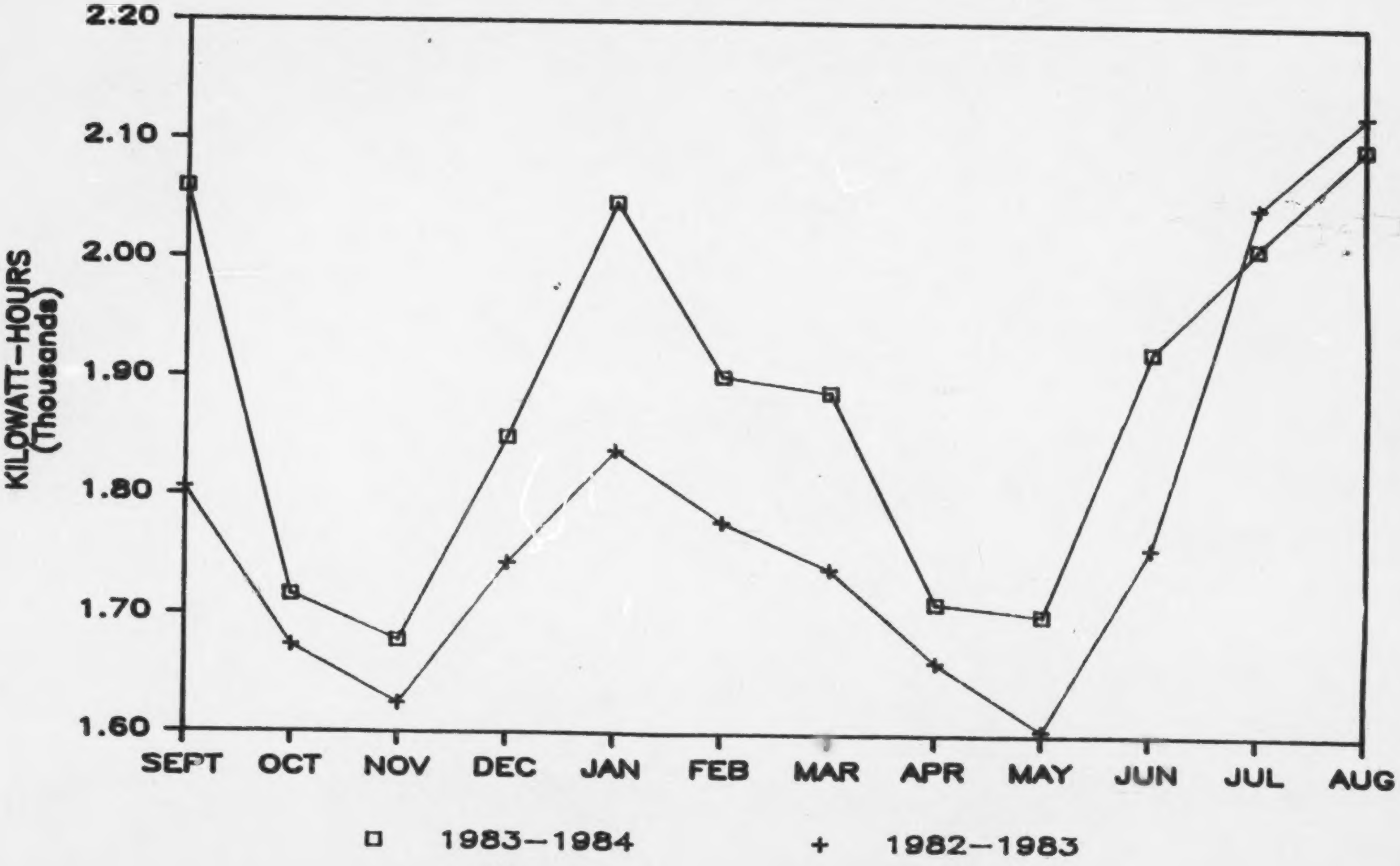


FIG. 5C. OHIO INDUSTRIAL SECTOR ELECTRICITY CONSUMPTION
(1982 - 1983 VS. 1983 - 1984)

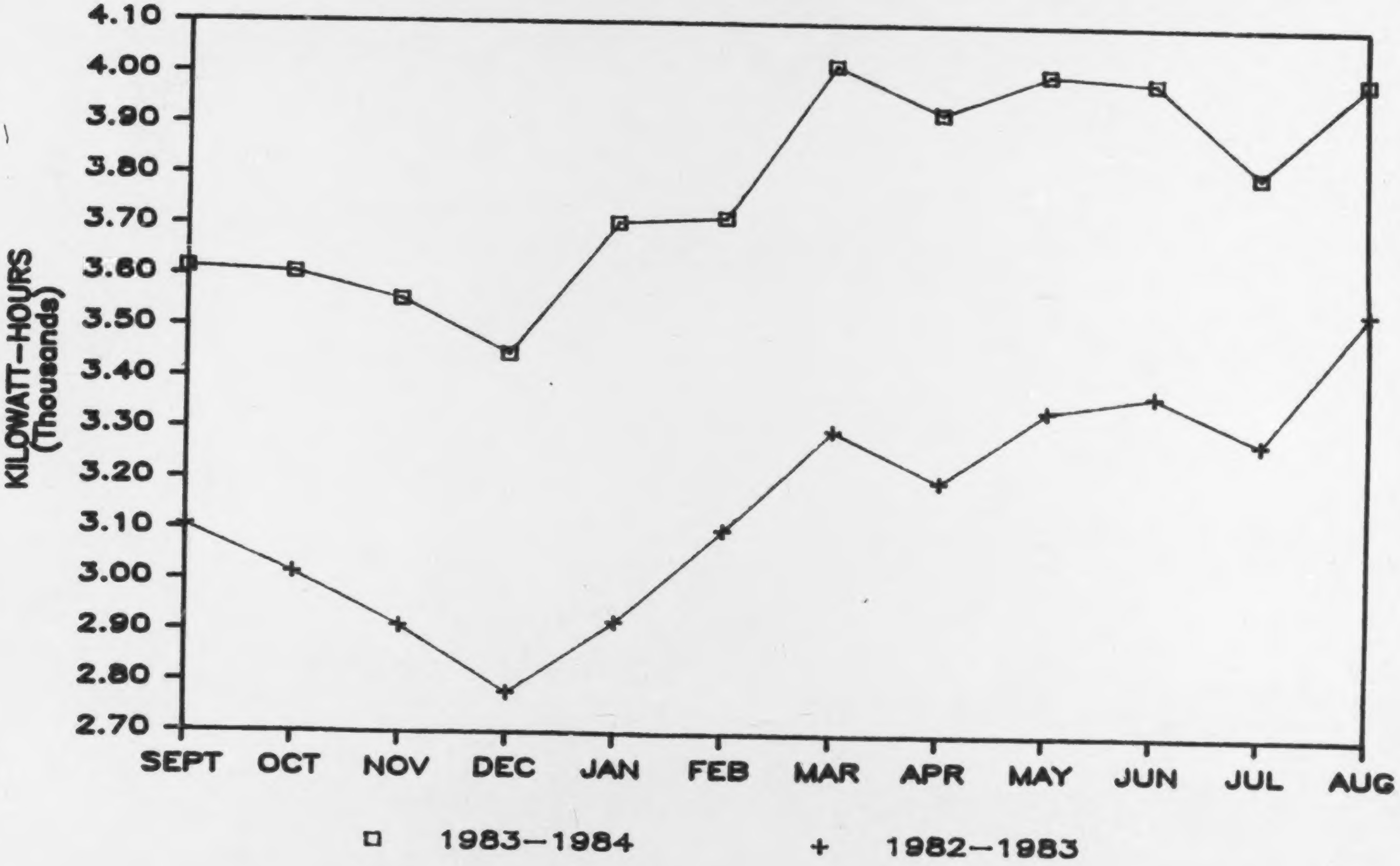


FIG 5D. TOTAL OHIO ELECTRICITY CONSUMPTION
(1982 - 1983 VS. 1983 - 1984)

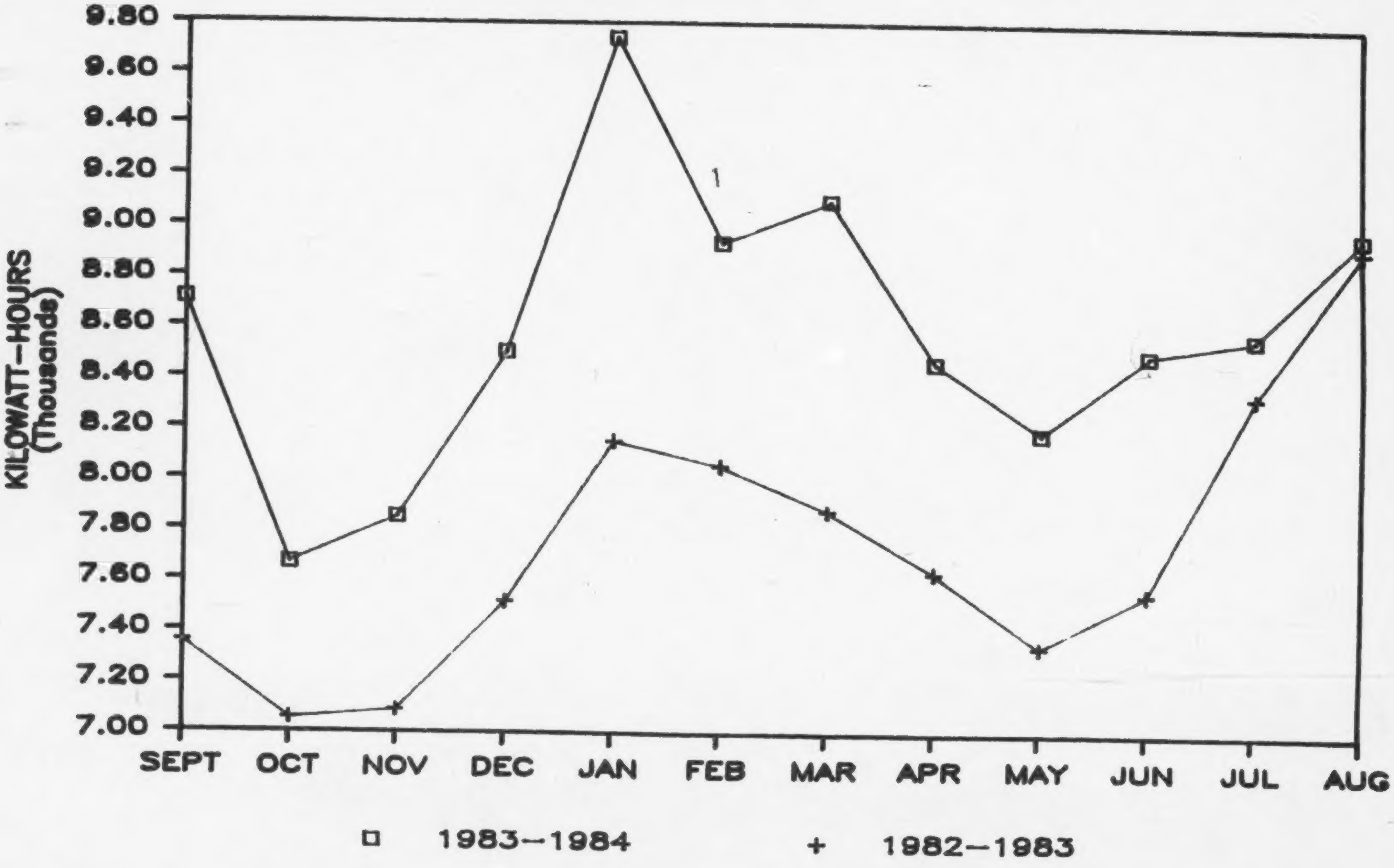


Fig. 5E Monthly Electricity Consumption

January 1971 – August 1984

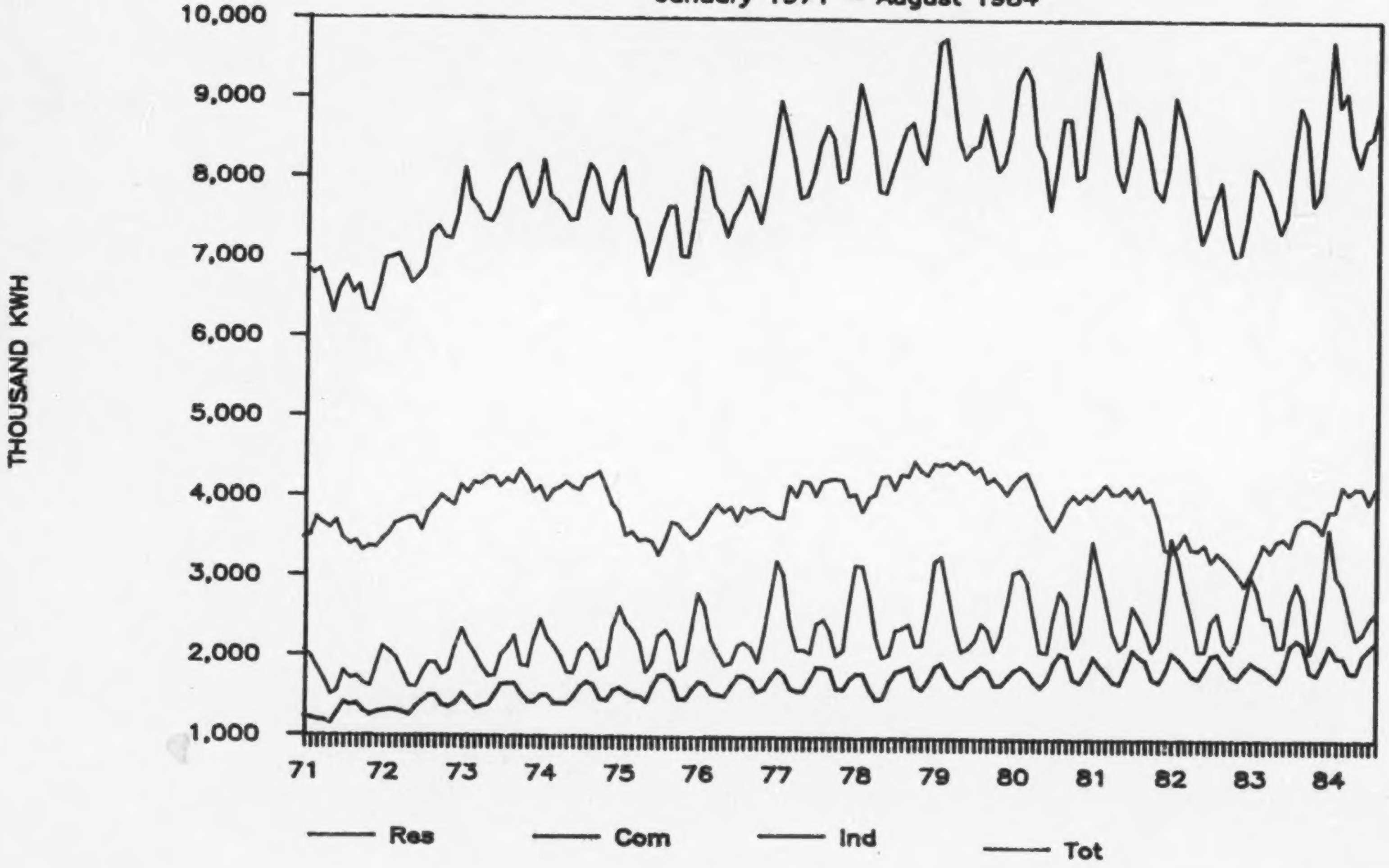


Table 7-A. Ohio Electric Utilities' Projected Deliveries, Consumption, and Stocks of Coal for Electricity Generation, 1984-1985, (1000 Short Tons)

	November	December	January	February	March	April	May	June	July	August	September	October	Total
Allegheny Power System													
Deliveries	50	1,866	1,360	1,360	1,355	1,352	1,352	1,342	1,352	1,352	1,357	1,352	15,451
Consumption	1,266	1,363	1,374	1,248	1,364	1,225	1,346	1,384	1,476	1,434	1,310	1,338	16,129
Stocks	2,493	2,995	2,981	3,093	3,083	3,211	3,217	3,175	3,051	2,969	3,016	3,030	
American Electric Power													
Deliveries	2,586	2,665	3,374	3,334	3,362	3,423	3,507	3,124	2,530	3,354	3,306	3,457	38,022
Consumption	3,560	3,931	4,336	3,791	3,740	3,233	3,226	3,272	3,535	3,574	3,453	3,492	43,143
Stocks	13,974	12,708	11,746	11,289	10,911	11,101	11,382	11,234	10,229	10,009	9,862	9,827	
Buckeye Power Inc.													
Deliveries	119	116	114	110	130	146	148	137	99	148	145	149	1,561
Consumption	173	178	180	120	128	170	173	166	134	112	163	131	1,828
Stocks	398	336	270	260	262	238	213	184	149	185	167	185	
Cincinnati Gas & Electric													
Deliveries	367	415	500	461	500	461	461	461	520	600	550	540	5,836
Consumption	476	572	575	499	551	544	497	552	605	608	537	510	6,526
Stocks	1,580	1,423	1,348	1,310	1,259	1,177	1,140	1,049	965	957	970	999	
Cleveland Electric Illuminating													
Deliveries	199	478	476	493	488	426	436	486	483	475	431	398	5,270
Consumption	449	478	476	493	488	426	436	486	483	475	431	398	5,520
Stocks	1,131	1,131	1,131	1,131	1,131	1,131	1,131	1,131	1,131	1,131	1,131	1,131	
Dayton Power and Light													
Deliveries	364	383	779	733	631	580	665	637	686	678	521	579	7,236
Consumption	641	661	763	711	613	556	642	615	665	656	525	555	7,603
Stocks	797	519	535	557	575	599	622	644	665	687	683	707	
Ohio Edison													
Deliveries	715	794	1,051	919	915	860	932	984	996	1,055	972	940	11,134
Consumption	1,009	1,111	1,180	1,000	966	926	913	997	1,118	1,046	937	983	12,187
Stocks	2,697	2,380	2,250	2,170	2,119	2,053	2,072	2,059	1,937	1,946	1,981	1,938	
Ohio Valley Electric Corp.													
Deliveries	446	446	529	478	536	579	604	589	648	652	588	586	6,679
Consumption	613	626	593	541	599	579	604	589	648	652	588	586	7,216
Stocks	1,601	1,421	1,357	1,294	1,230	1,230	1,230	1,230	1,230	1,230	1,230	1,230	
Toledo Edison													
Deliveries	141	130	188	183	171	149	143	154	167	171	162	152	1,911
Consumption	231	238	188	183	171	149	143	154	167	171	162	152	2,109
Stocks	322	216	320	320	320	320	320	320	320	320	320	320	

NOTE: NUMBERS MAY NOT SUM TO TOTAL DUE TO INDEPENDENT ROUNDING

Source: ODOE Form SE-3A.

Table 7-8. Ohio Electric Utilities' Projected Deliveries, Consumption, and Stocks of Oil for Electricity Consumption, 1984-1985 (1000 Bbls.)

	November	December	January	February	March	April	May	June	July	August	September	October	Total
Allegheny Power System													
Deliveries	0	0	0	0	0	0	0	0	0	0	0	0	0
Consumption	0	0	0	0	0	0	0	0	0	0	0	0	
Stocks	163	163	163	163	163	163	163	163	163	163	163	163	
American Electric Power System													
Deliveries	44	49	47	42	43	36	43	47	43	41	56	46	537
Consumption	44	49	47	42	43	36	43	47	43	41	56	46	537
Stocks	314	314	314	314	314	314	314	314	314	314	314	314	
Buckeye Power System													
Deliveries	2	2	2	2	2	2	2	2	2	2	2	2	20
Consumption	2	2	2	2	2	2	2	2	2	2	2	2	20
Stocks	12	12	12	12	11	11	11	11	11	11	11	11	
Cincinnati Gas and Electric													
Deliveries	10	10	10	0	10	0	10	10	10	10	10	10	100
Consumption	10	14	3	2	9	7	6	7	16	16	11	3	105
Stocks	79	75	82	80	81	74	78	81	75	69	68	75	
Cleveland Electric Illuminating													
Deliveries	27	15	16	10	6	4	8	4	4	2	3	0	99
Consumption	27	15	16	10	6	4	8	4	4	2	3	0	99
Stocks	182	182	182	182	182	182	182	182	182	182	182	182	
Dayton Power and Light													
Deliveries	1	1	0	0	67	0	0	0	2	2	39	1	113
Consumption	9	10	18	17	11	7	4	6	9	8	9	9	116
Stocks	397	388	370	354	410	403	399	393	386	380	410	402	
Ohio Edison													
Deliveries	2	3	2	1	2	0	0	2	2	1	0	0	15
Consumption	2	3	2	1	2	0	0	2	2	1	0	0	15
Stocks	39	39	39	39	39	39	39	39	39	39	39	39	
Ohio Valley Electric Cor .													
Deliveries	2	2	2	2	2	2	2	2	2	2	2	2	20
Consumption	2	2	2	2	2	2	2	2	2	2	2	2	20
Stocks	6	6	6	6	6	6	6	6	6	6	6	6	
Toledo Edison													
Deliveries	156	155	260	227	176	206	182	163	171	176	152	125	2,149
Consumption	157	157	260	227	176	206	182	163	171	176	152	125	2,152
Stocks	522	520	510	510	510	510	510	510	510	510	510	510	

Source: ODOE Form SE-3A.

TABLE 7-C Electric Utilities' Demand Forecast Fuel Assessment, and Inventory Model (November 1984 - October 1985)

ALLEGHENY POWER SYSTEM

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	2768.0	3076.0	3243.5	2955.6	3033.4	2757.3	2650.1	2635.5	2837.3	2882.2	2722.4	2764.1	34325.3
EST DEMAND GEN BY COAL	2768.0	3076.0	3243.5	2955.6	3033.4	2757.3	2650.1	2635.5	2837.3	2882.2	2722.4	2764.1	34325.3
PROJ DAILY CONSUMPTION COAL (KTONS)	42.44	45.64	48.13	46.88	45.01	42.28	39.32	40.41	42.10	42.77	41.74	41.01	
COAL DELIVERIES (KTONS)	50.0	1865.8	1359.7	1359.7	1354.7	1352.2	1352.2	1342.2	1352.2	1352.2	1357.2	1352.2	15450.7
END OF MONTH STOCK COAL (KTONS)	2486.	2936.	2804.	2804.	2764.	2848.	2981.	3111.	3158.	3184.	3289.	3370.	
NUMBER OF DAYS SUPPLY COAL	53.	62.	61.	65.	68.	71.	72.	73.	75.	77.	80.	82.	

AMERICAN ELECTRIC POWER SYSTEM

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	7230.0	7958.0	8741.0	7982.0	7816.0	6917.0	6788.0	6893.0	7308.0	7463.0	6834.0	7068.0	88997.9
EST DEMAND GEN BY COAL	7230.0	7958.0	8741.0	7982.0	7816.0	6917.0	6788.0	6893.0	7308.0	7463.0	6834.0	7068.0	88997.9
PROJ DAILY CONSUMPTION COAL (KTONS)	112.31	119.63	131.40	128.26	117.49	107.44	102.04	107.07	109.86	112.19	106.15	106.25	
COAL DELIVERIES (KTONS)	2586.0	2665.0	3374.0	3334.0	3362.0	3423.0	3507.0	3124.0	2530.0	3354.0	3306.0	3457.0	38022.0
END OF MONTH STOCK COAL (KTONS)	14165.	13121.	12422.	12036.	11756.	11956.	12300.	12212.	11336.	11212.	11334.	11497.	
NUMBER OF DAYS SUPPLY COAL	114.	107.	108.	111.	111.	111.	113.	112.	105.	106.	107.	108.	

TABLE 7-C Electric Utilities' Demand Forecast Fuel Assessment, and Inventory Model
(November 1984 - October 1985)

CINCINNATI GAS & ELECTRIC

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	1235.5	1380.4	1464.6	1312.3	1337.8	1154.0	1251.5	1392.4	1502.8	1527.8	1279.6	1225.0	16063.
EST DEMAND GEN BY COAL	1235.5	1380.4	1464.6	1312.3	1337.8	1154.0	1251.5	1392.4	1502.8	1527.8	1279.6	1225.0	16063.
PROJ DAILY CONSUMPTION COAL (KTONS)	16.43	17.77	18.85	18.06	17.22	15.35	16.11	18.52	19.34	19.66	17.02	15.77	
COAL DELIVERIES (KTONS)	367.4	414.9	500.0	461.0	500.0	461.0	461.0	461.0	520.0	600.0	550.0	540.0	5836.
END OF MONTH STOCK COAL (KTONS)	1563.	1428.	1343.	1281.	1247.	1247.	1209.	1114.	1035.	1025.	1065.	1116.	
NUMBER OF DAYS SUPPLY COAL	86.	79.	79.	79.	76.	71.	64.	57.	56.	63.	68.	71.	

CLEVELAND ELECTRIC ILLUMINATING COMPANY

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	1496.0	1598.0	1687.0	1688.0	1633.0	1517.0	1524.0	1619.0	1678.0	1631.0	1561.0	1522.0	19154.
EST DEMAND GEN BY COAL	1496.0	1598.0	1687.0	1688.0	1633.0	1517.0	1524.0	1619.0	1678.0	1631.0	1561.0	1522.0	19154.
PROJ DAILY CONSUMPTION COAL (KTONS)	14.96	15.46	16.33	17.46	15.80	15.17	14.75	16.19	16.24	15.78	15.61	14.73	
COAL DELIVERIES (KTONS)	198.7	477.5	476.4	492.8	488.3	426.0	436.4	486.5	483.2	475.4	431.1	398.1	5270.
END OF MONTH STOCK COAL (KTONS)	1131.	1129.	1100.	1086.	1084.	1055.	1035.	1035.	1015.	1001.	964.	906.	
NUMBER OF DAYS SUPPLY COAL	70.	67.	67.	71.	72.	68.	64.	65.	65.	66.	65.	61.	

TABLE 7-C Electric Utilities' Demand Forecast Fuel Assessment, and Inventory Model
(November 1984 - October 1985)

DAYTON POWER & LIGHT

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	914.0	1028.3	1160.6	1031.6	1031.6	893.5	893.5	920.6	1008.6	979.8	893.3	938.0	11693.
EST DEMAND GEN BY COAL	914.0	1028.3	1160.6	1031.6	1031.6	893.5	893.5	920.6	1008.6	979.8	893.3	938.0	11693.
PROJ DAILY CONSUMPTION COAL (KTONS)	13.95	15.19	17.14	16.29	15.23	13.64	13.20	14.05	14.89	14.47	13.63	13.85	
COAL DELIVERIES (KTONS)	364.0	383.0	779.0	733.0	631.0	580.0	665.0	637.0	686.0	678.0	521.0	579.0	7236.
END OF MONTH STOCK COAL (KTONS)	1020.	932.	1179.	1440.	1599.	1770.	2026.	2241.	2466.	2695.	2807.	2957.	
NUMBER OF DAYS SUPPLY COAL	63.	56.	77.	103.	115.	125.	143.	159.	177.	195.	203.	213.	

OHIO EDISON SYSTEM

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	1943.5	2104.0	2264.9	2054.6	2092.3	1879.5	1869.9	1935.9	2060.8	2104.4	1919.2	2015.3	24244.
EST DEMAND GEN BY COAL	1943.5	2104.0	2264.9	2054.6	2092.3	1879.5	1869.9	1935.9	2060.8	2104.4	1919.2	2015.3	24244.
PROJ DAILY CONSUMPTION COAL (KTONS)	31.61	33.12	35.65	34.57	32.94	30.57	29.44	31.49	32.44	33.13	31.22	31.72	
COAL DELIVERIES (KTONS)	1009.2	1111.0	1180.2	999.8	965.6	925.8	913.2	997.4	1117.6	1046.4	937.2	983.2	12186.
END OF MONTH STOCK COAL (KTONS)	3052.	3136.	3211.	3208.	3153.	3162.	3162.	3215.	3327.	3346.	3347.	3347.	
NUMBER OF DAYS SUPPLY COAL	89.	91.	99.	103.	103.	101.	98.	100.	104.	106.	106.	105.	

TABLE 7-C Electric Utilities' Demand Forecast Fuel Assessment, and Inventory Model
(November 1984 - October 1985)

OHIO VALLEY ELECTRIC CORPORATION

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	1455.6	1492.1	1418.5	1289.8	1436.5	1379.0	1418.6	1372.4	1480.7	1480.7	1344.3	1380.3	16948.6
EST DEMAND GEN BY COAL	1455.6	1492.1	1418.5	1289.8	1436.5	1379.0	1418.6	1372.4	1480.7	1480.7	1344.3	1380.3	16948.6
PROJ DAILY CONSUMPTION COAL (KTONS)	20.38	20.22	19.22	18.68	19.46	19.31	19.22	19.21	20.06	20.06	18.82	18.70	
COAL DELIVERIES (KTONS)	446.0	446.0	529.0	477.7	535.7	578.5	604.2	588.5	647.6	652.0	587.8	585.9	6678.8
END OF MONTH STOCK COAL (KTONS)	1602.	1421.	1355.	1291.	1223.	1222.	1231.	1243.	1268.	1299.	1322.	1328.	
NUMBER OF DAYS SUPPLY COAL	82.	75.	71.	67.	63.	63.	63.	62.	65.	69.	71.	71.	

TOLEDO EDISON

	NOV	DEC	JAN	FEB	MAR	APR	MAY	JUNE	JULY	AUG	SEPT	OCT	TOTAL
DEMAND FORECAST (GWH)	626.8	670.9	771.5	734.2	724.7	637.3	615.9	641.6	676.8	693.8	662.8	625.5	8081.
EST DEMAND GEN BY COAL	626.8	662.8	533.9	518.3	485.5	406.0	376.9	413.2	440.6	457.9	434.1	386.6	5742.
EST DEMAND GEN BY NUC	0.0	8.1	237.6	215.9	239.2	230.7	239.0	228.4	236.2	235.9	228.7	238.9	2338.
PROJ DAILY CONSUMPTION COAL (KTONS)	7.65	7.83	6.30	6.54	5.73	4.95	4.45	5.04	5.20	5.41	5.30	4.56	
COAL DELIVERIES (KTONS)	141.0	130.0	188.0	183.0	171.0	149.0	143.0	154.0	167.0	171.0	162.0	152.0	1911.
END OF MONTH STOCK COAL (KTONS)	324.	211.	204.	197.	190.	191.	196.	198.	204.	208.	211.	221.	
NUMBER OF DAYS SUPPLY COAL	44.	33.	31.	35	39.	41.	39.	38.	38.	41.	46.	48.	

III. NATURAL GAS

Natural gas distribution companies operating in Ohio are classified into two categories with respect to their reporting requirements. Eight major companies, Cincinnati Gas and Electric, Columbia Gas of Ohio, Dayton Power and Light, East Ohio Gas, National Gas and Oil, Ohio Gas, River Gas, and West Ohio Gas, report to ODOE every month. Eighteen small utilities and two municipal utilities report twice a year. This section is based upon the most recent reports of these utilities.

Distribution and Supplies

Distribution: Service shares of the gas distribution companies operating in Ohio are presented in Table 8 for the annual period September 1983 to August 1984. During this period, the four large distribution companies--Cincinnati Gas and Electric, Columbia Gas of Ohio, Dayton Power and Light, and East Ohio Gas--jointly distributed 92.80 percent of the reported natural gas requirements of the state. The four intermediate-sized companies--National Gas and Oil, Ohio Gas, River Gas, and West Ohio Gas--distributed an additional 5.26 percent. The remaining 1.94 percent of the reported natural gas requirements were distributed by 18 small utilities and two municipal utilities. The figures presented in Table 8 do not include self-help natural gas, which is gas directly procured by industrial customers for their own use. Self-help and other gas marketing programs are discussed beginning on page 40 of this report. Total requirements of 741,201 MMCF reported in Table 8 represent a decrease of approximately 1 percent in the distribution of natural gas compared to the same period last year.

The behavior of monthly sectoral requirements between September 1983 and August 1984 versus the preceding annual period are comparatively presented in figures 7-A through 7-D. Figure 7E is a comparison of the monthly requirements for each sector, from January 1970 to August 1984.

Sources of Supply: The major sources of natural gas supplies to the state of Ohio are presented in Table 9, and the quantities supplied are shown graphically in Figure 6. From September 1983 through August 1984, the eight major gas distribution companies of Ohio, which together account for 98.11 percent of the reported natural gas distribution in the state, procured 781,511 MMCF of natural gas to meet Ohio's requirements. This represents an 8.2 percent increase in the supplies of natural gas to Ohio compared to the same period in the previous twelve months.

Of the 781,511 MMCF total procurement, interstate gas purchases and synthetic natural gas (SNG) comprise 92.13 percent (See Table 9). Purchases of Ohio gas comprise the remaining 7.87 percent of the total. The 61,468 MMCF of Ohio production of natural gas purchased by the eight major gas utilities from September 1983 to August 1984 represents a 2.2 percent increase in their purchases of Ohio's product during the preceding annual period. This amount corresponds to approximately 40.6 percent of the state's total production of 151,300 MMCF in calendar year 1983.

Domestic interstate gas is the major source of supply for Ohio. Columbia Gas Transmission Corporation and Consolidated Gas Supply Corporation provided 67.2 percent of the natural gas supplied to the eight major Ohio gas distribution companies from September 1983 through August 1984.

Historical Behavior of Interstate Natural Gas Supplies: Until 1978, wellhead prices paid by interstate transmission companies to natural gas producers were under federal control. Starting in the early seventies, and especially after the OPEC oil price increase of 1973, the federally-regulated gas supply prices for interstate commerce lagged behind the unregulated prices which the product commanded at the wellhead for intrastate commerce. Consequently, there were supply shortages in the interstate natural gas markets during the heating season, whereas producing states such as Texas and Louisiann experienced an over abundance of supplies at all times.

In Ohio, which is more than 90% dependent on interstate gas, a ban was imposed upon new customer hook-ups in 1972 which remained in effect until 1978. Similarly, base allocations of lower priority industrial and commercial customers were curtailed between 1973 and 1978.

The Natural Gas Policy Act (NGPA), which became effective in 1978, deregulated some gas prices immediately, and legislated a phased decontrol of prices for many categories of natural gas by 1985. Pursuant to the passage of the NGPA, relatively unfettered increases in interstate gas prices have stimulated new and costlier gas production from deep wells, thus increasing available supplies. The same price increases have also choked off sectoral requirements. There have been no curtailments in Ohio since 1978, and none are expected in the foreseeable future.

Historical Behavior of Sectoral Gas Requirements

Annual Sectoral Requirements: Long-term trends in annual sectoral natural gas prices and sectoral natural gas requirements for Ohio are presented in Figures B-5 thru B-8. It is clear from these figures that the dynamic behavior of natural gas markets in Ohio has been characterized by increasing price trends and declining requirement trends since the early seventies.

Between 1970 and 1983, in response to a series of worldwide price shocks, including the OPEC oil price increases of 1973 and 1978, the price of natural gas in Ohio increased over eightfold in the residential and commercial sectors, and over ninefold in the industrial sector (See Table 10). These price increases far exceed the increase in the rate of inflation (See Table 11), or the rate of increase of the gross state product. Such significant and sustained increases in sectoral prices have induced significant and sustained conservation efforts among sectoral customers, which in turn have been translated into declining sectoral requirement trends.

It should be noted, however, that the declining trends in industrial sector requirements represent not only the net outcomes of price induced energy conservation and fuel switching programs, but also a permanent loss in industrial capacity, especially in the older and more energy intensive manufacturing industries of the state's economy.

Monthly Sectoral Requirements: The monthly time series behavior of residential, commercial, industrial, and total natural gas requirements in Ohio from January 1974 through August 1984, along with the Division's independent forecasts for September 1984 through October 1985 are displayed in figures B-1 through B-4. The seasonal variations in residential and commercial requirements can easily be discerned from these figures. Natural gas is the primary source of space heating in Ohio. Demand peaks in all sectors during the heating season and falls off during the cooling season. The dramatic effects of the curtailments imposed on the industrial sector during the 1976-77 heating season is clearly discernable in figure B-4.

Utility Forecasts: Consolidated Results and Twelve Month Outlook

Consolidated Results: Aggregate supply and demand projections of the eight major utilities, as presented in Table 12 and Figure 8, indicate a 0.06 percent annual surplus of natural gas supplies over requirements. All eight utilities project supply to be approximately equal to, requirements during the 1984-85 heating season. Supply and demand projections of the individual utilities, as submitted in their "Monthly Reports of Supply and Demand of Natural Gas," are summarized in Appendix B, Table B-9.

Table 13 shows the actual aggregate monthly sectoral requirements for the eight major utilities from September 1983 through August 1984, along with the utilities' consolidated projections for the September 1984 through August 1985 period. The forecast shows decreases in demand in the three major sectors. Figure 9 is a graphic representation of the utilities' consolidated sectoral projections for the forecast period. Overall, the forecast total annual gas requirement shows an decrease of 7.8 percent relative to the same twelve month period last year.

Actual and forecast aggregate supply of natural gas by source is displayed in Table 14. Delivered product from all pipeline sources is expected to decrease 7.8 percent over the previous twelve month period. The majority of this supply, roughly 92 percent, will continue to come from out-of-state sources. Columbia Gas Transmission Corporation by far the largest supplier to the state, is projected to supply 42.0 percent of natural gas demand.

Twelve Month Outlook: On the basis of the utilities' natural gas supply and sectoral requirement projections, the outlook for the next twelve months indicates no supply shortages, under both normal and 10 percent colder than normal weather conditions, in Ohio.

The Ohio Division of Energy will be monitoring developments in the supplies and requirements of natural gas throughout the rest of the year and will take appropriate action if a critical situation develops. However, Ohio Division of Energy's current conclusion is that prevailing conditions portend no shortages or curtailments of natural gas during the 1984-85 heating season.

Ohio Division of Energy Independent Forecast

Methodology

The independent natural gas demand forecasts prepared by Ohio Division of Energy for the eight major gas utilities serving Ohio are based upon time series analyses of sectoral requirements for each individual month of the year, between January 1970 and August 1984, adjusted for long-term annual trends, severe climatic conditions, and the business cycle.

Time series models, with adjustments, yield projections that possess better statistical properties, and are at least as accurate as alternative short-term forecasting techniques. They also offer the added flexibility of being able to produce updated forecasts which reflect and incorporate specific assumptions pertaining to the prevailing climatic and economic conditions every time the most recent actual monthly requirements are reported to Ohio Division of Energy. The utilization of an adjusted time series methodology is designed to provide a double check, thus reducing forecasting error for a more accurate and decisive diagnosis of energy requirements of the state.

Special Assumptions

We expect the relatively strong economic recovery experienced by the state to stabilize through out the forecasting horizon, with the unemployment rate fluctuating between 8.0 to 9.5 percent. Although this would ordinarily tend to increase industrial requirements, the Division of Energy anticipates that increasing natural gas prices, as the final phase of NGPA goes into effect on January 1, 1985, shall keep industrial requirements at or slightly below current levels.

Results

The results obtained on the basis of ODOE's independent forecast of sectoral requirements and the utilities' forecasts of supplies are presented in Tables 15 and 17-20, for the 1984-85 heating season. Summary results presented in Table 15 indicate a potential deficiency of 8.9 percent in the case of a 10 percent colder than normal winter. Given the availability of interstate gas supplies and the current storage capacities of Ohio utilities, no actual deficiencies or curtailments are expected.

The deficiencies indicated in Tables 15 and 17-20 arise, in the first place, from the low supply projections made by Ohio utilities. Clearly, such low projections do not reflect anticipated natural gas supply shortages in the next 12 months. They may reflect anticipated substantial declines in sectoral requirements in response to anticipated substantial increases in sectoral natural gas prices, as the final phase of NGPA price decontrols go into effect on January 1, 1985. The differences between the Division's forecast of sectoral requirements and the utilities forecasts of sectoral requirements seem to arise, therefore, from different assumptions pertaining to the magnitudes of the anticipated price increases during the forecasting horizon.

ODOE's independent forecasts for the four major utilities are compared with each company's forecast for the period from November 1984 through October 1985 in Appendix B, Tables B-1 through B-4. The Division's forecasts of sectoral end-use gas requirements for Ohio are presented in Appendix B, Tables B-5 through B-8. These have been adjusted for the long-term historical trends observed in sectoral natural gas requirements in the State. Finally, for comparison, Appendix B, Table B-9 displays twelve month forecasts produced monthly by each utility and reported to the Ohio Division of Energy.

Outlook

Any unexpected changes in the short-term behavior of residential and commercial requirements would mainly be associated with variations in the severity of the heating season, and alterations in the long-term trends followed by natural gas prices. Given conservation efforts and increasing supplies of natural gas, dramatic changes in the long-term trends followed by residential and commercial natural gas requirements and prices are not anticipated in the near future.

In recent years, the industrial sales of natural gas by utilities have decreased substantially. Part of this has been due to conservation, fuel switching and declining industrial activity in the basic industries. An increasing portion of this decline has also been the result of self-help programs administered by the PUCO and fuel oil displacement and special marketing programs administered by the Federal Energy Regulatory Commission (FERC).

The State of Ohio initiated a self-help program in 1974 to assist industrial consumers whose tariff supplies of natural gas were threatened with curtailment. The program permits industrial concerns to purchase their own gas at the wellhead and have it transported directly to their location by a gas distribution company. Throughout the mid and late 1970s, industrial consumers paid unregulated prices to producers and contracted for delivery with the gas distribution companies, which changed a fee for transmission and were permitted receipt of up to 25% of the gas for their own customers. As a result of the current surplus of natural gas, the Public Utilities Commission of Ohio has moved to amend self-help rules to rescind distribution company privileges to acquire ownership shares of self-help gas.

The rapid rise in natural gas prices has replaced potential curtailment as the incentive for Ohio industry's participation in the state's self-help program. In 1983, 20% of industrial gas requirements were met with self-help gas deliveries. This percentage would have been even higher, had a lack of transmission capability not constrained the ability of the gas distribution companies to deliver self-help gas. Under such conditions, self-help deliveries are subject to curtailment according to PUCO rules.

Self-help gas has emerged as a resource vital to the economic development of Ohio. Its cost advantage improves the competitive positions of participating industries. Ohio's gas distribution companies and their customers receive the benefits of PUCO regulated transportation changes. Finally, self-help gas provides an additional market for Ohio gas producers and spurs competition in wellhead and burner tip prices.

Federally regulated marketing programs have become significant in 1984 and have added to the loss of mainly industrial tariff customers. Fuel oil displacement and special marketing programs regulated by FERC, and Ohio self-help will account for over 36% of Ohio industrial gas use in 1984.

Emergency Response Capability Profile

There have been no natural gas curtailments in Ohio since 1978, and neither Ohio gas utilities nor the gas pipeline companies project any curtailments through October 1985. However, in the event of a shortage, it is anticipated that fuel-switching capability of industrial and large commercial users would be accelerated. Detailed emergency plans that describe strategies to respond to fuel supply shortfalls are on file at the Ohio Division of Energy.

Table 8: Total Natural Gas Requirements of All Commercial Utilities in Ohio, September 1983 through August 1984

	(1) Sales to All End Users	(2) Storage (In)	Total Requirement (1+2)	Percent of Total Ohio Requirement
Cincinnati Gas and Electric Co.	72303	0	72303	9.75
Columbia Gas of Ohio	218424	0	218424	29.47
Dayton Power and Light Co.	50653	0	50653	6.83
East Ohio Gas Co.	282484	64045	346529	46.75
National Gas and Oil Co.	14676	1100	15776	2.13
Ohio Gas Co.	6742	30	6772	0.91
River Gas Co.	4264	0	4264	0.58
West Ohio Gas Co.	12075	0	12075	1.63
Total Eight Major Utilities	661621	65175	726796	98.06
Total Small Utilities	7221	0	7221	0.97
Municipal Utilities	7184	0	7184	0.97
TOTAL ALL UTILITIES	676026	65175	741201	100.00

Source: ODOE Form SG-2 and SG-4.

Table 9: Sources of Natural Gas Supplies to the Eight Major Gas Utilities, September 1983 through August 1984

	Supply	Percent of Total	Rank
Columbia Gas Transmission Corp.	320346	40.99	1
Consolidated Gas Supply Corp.	204936	26.22	2
Lawrenceburg Gas	34373	4.40	6
Michigan/Wisconsin Pipeline Co.	1860	0.24	10
Panhandle Eastern Pipeline Co.	46214	5.91	5
Tennessee Gas Pipeline Co.	1600	0.20	11
Texas Eastern Transmission Corp.	8126	1.04	8
Texas Gas Transmission Corp.	282	0.04	12
Green Springs (SNG) (Columbia LNG)	26044	3.33	7
Storage/Propane[1]	68874	8.81	3
Other	7388	0.95	9
Total SNG and Out-of-State	720043	92.13	
Ohio Product	61468	7.87	4
TOTAL	781511	100.00	

Note: [1] Gas in storage represents a source during the period under consideration. Figure is elevated because Cincinnati Gas and Electric maintains propane in storage for peak-sharing.

Source: Ohio Division of Energy Form SG-2

FIG. 6. Sources of Natural Gas Supply
For the Eight Major Gas Utilities
(September 1983 - August 1984)

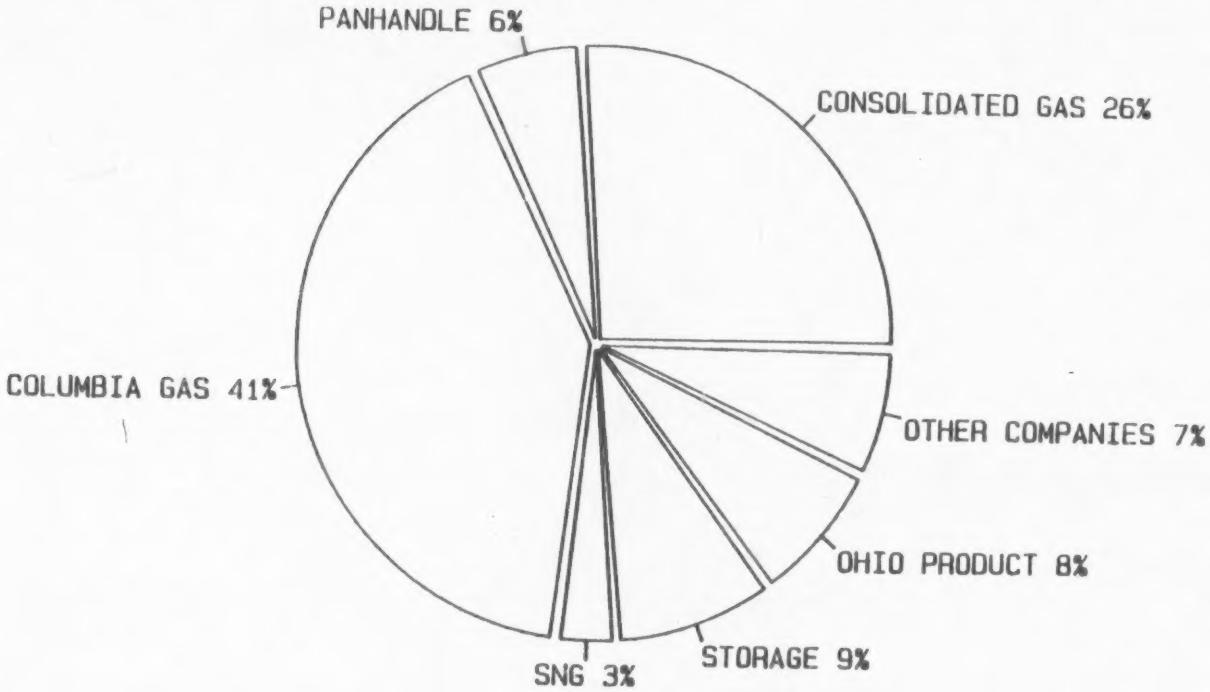


Table 10: Ohio Natural Gas Prices in Current Dollars, 1970-1983 ($ Per MMBtu)

Year	Residential	Commercial	Industrial
1970	0.84	0.73	0.52
1971	0.96	0.81	0.56
1972	1.02	0.86	0.62
1973	1.08	0.94	0.65
1974	1.23	1.07	0.85
1975	1.51	1.35	1.12
1976	1.79	1.63	1.43
1977	2.23	2.07	1.95
1978	2.43	2.24	2.05
1979	2.78	2.57	2.32
1980	3.45	3.23	2.97
1981	3.87	3.61	3.34
1982	4.80	4.53	4.20
1983	5.88	5.40	5.01

Source: American Gas Association, Gas Facts, and the Ohio Division of Energy.

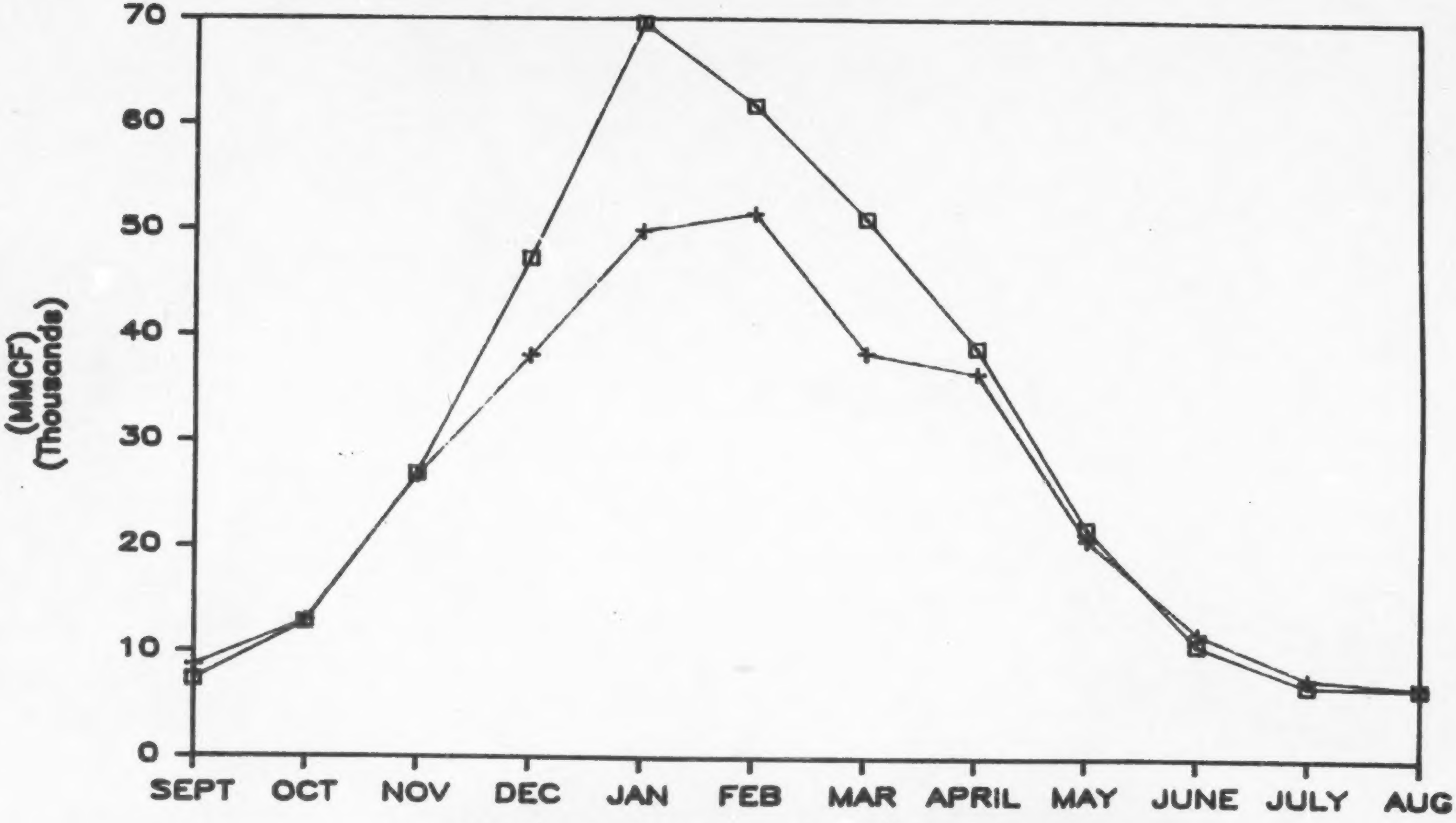
Table 11: Ohio Natural Gas Prices in Constant Dollars, 1970-1983
($ Per MMBtu)

Year	Residential	Commercial	Industrial
1970	0.72	0.63	0.45
1971	0.78	0.67	0.47
1972	0.81	0.69	0.49
1973	0.81	0.71	0.46
1974	0.83	0.72	0.58
1975	0.94	0.84	0.69
1976	1.05	0.96	0.84
1977	1.23	1.14	1.07
1978	1.24	1.15	1.05
1979	1.28	1.18	1.07
1980	1.40	1.31	1.20
1981	1.42	1.34	1.25
1982	1.66	1.57	1.45
1983	1.84	1.69	1.57

Note: All prices are stated in terms of 1967 dollars.

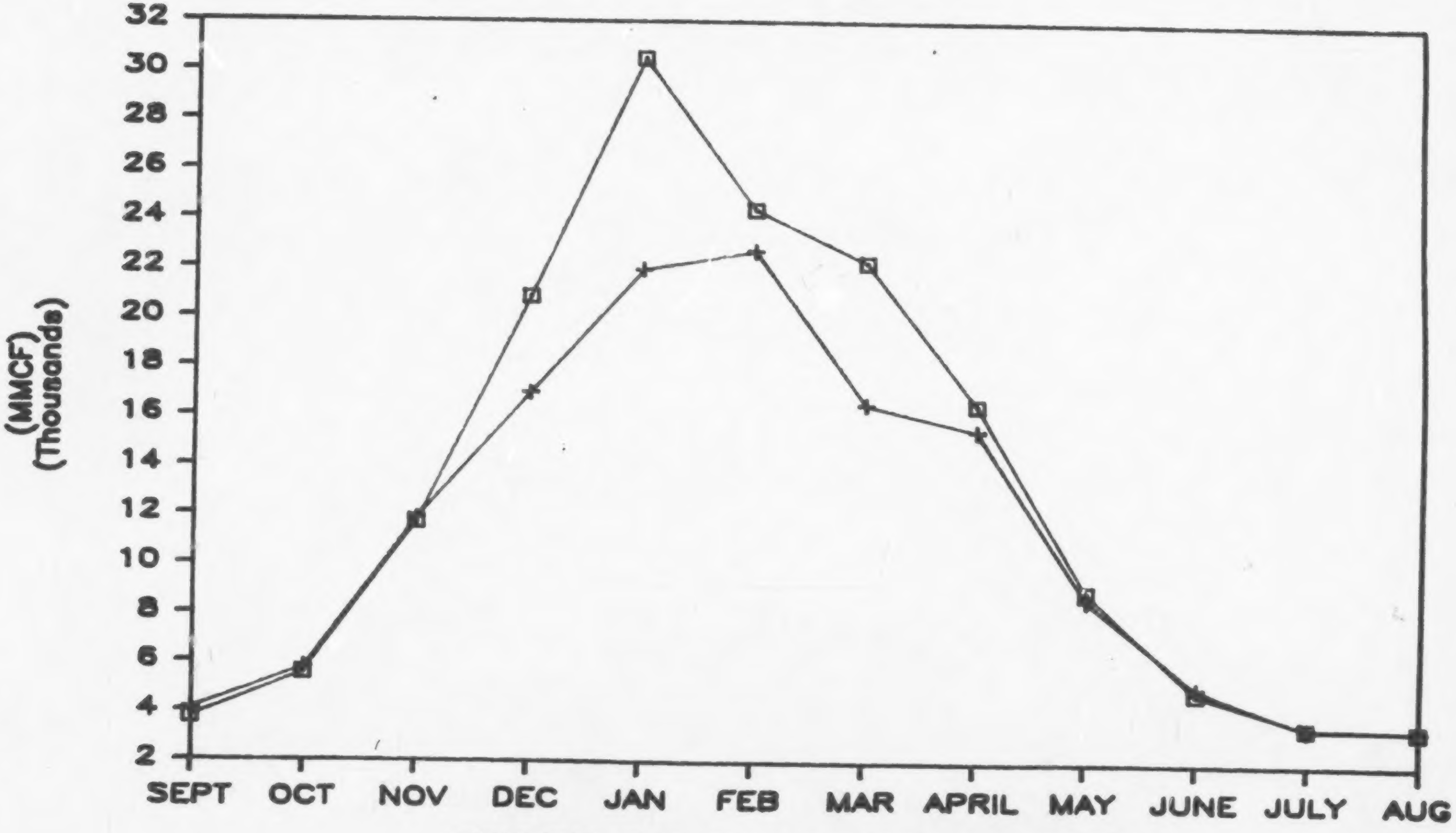
Source: American Gas Association, Gas Facts, 1983,
U.S. Department of Commerce, "Survey of
Current Business", April 1982, and
the Ohio Division of Energy.

FIG. 7A. OHIO RESIDENTIAL SECTOR NATURAL GAS CONSUMPTION
1982 - 1983 VS. 1983 - 1984



SOURCE: THE OHIO DIVISION OF ENERGY

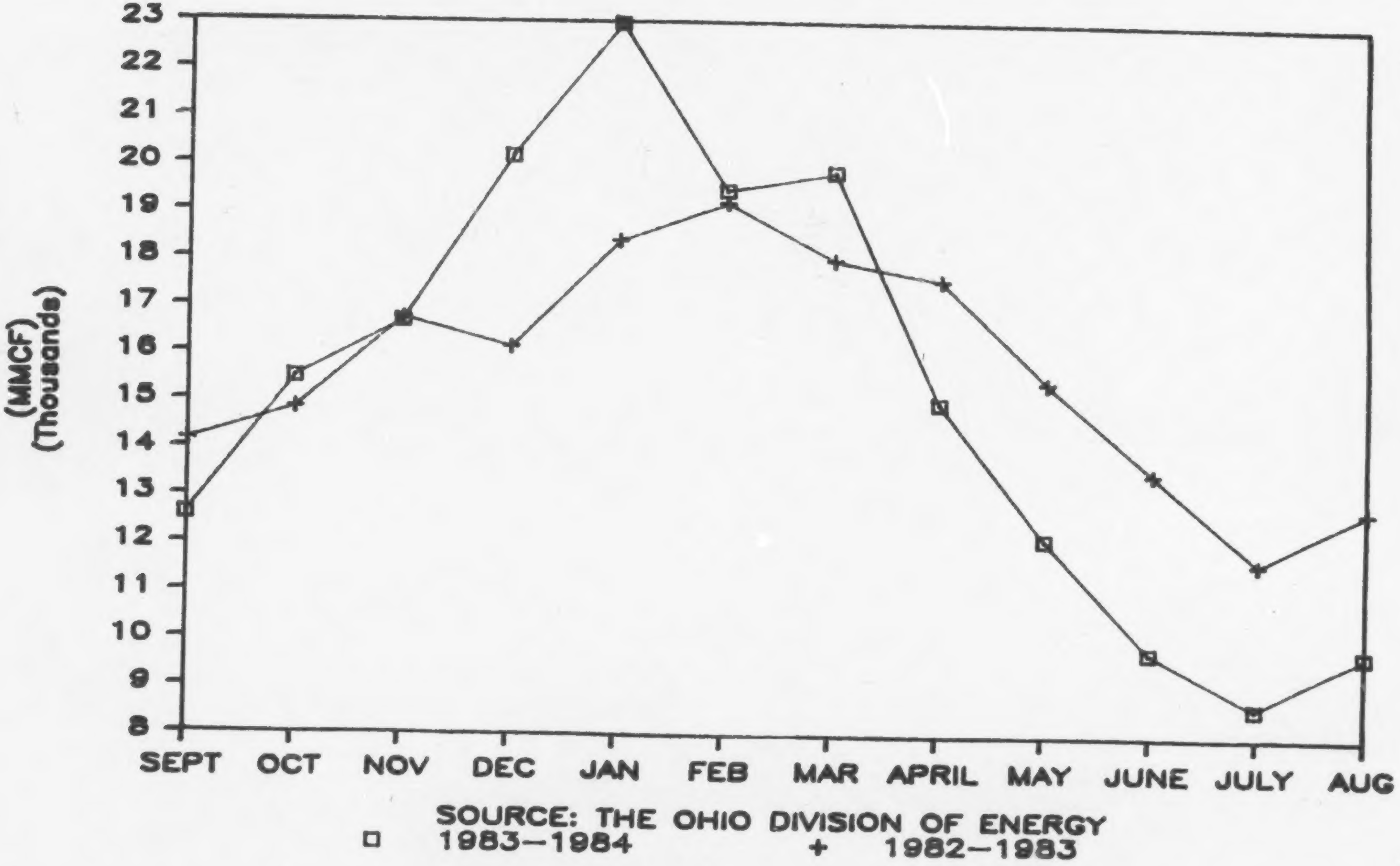
FIG. 7B. OHIO COMMERCIAL SECTOR NATURAL GAS CONSUMPTION
1982 - 1983 VS. 1983 - 1984



SOURCE: THE OHIO DIVISION OF ENERGY

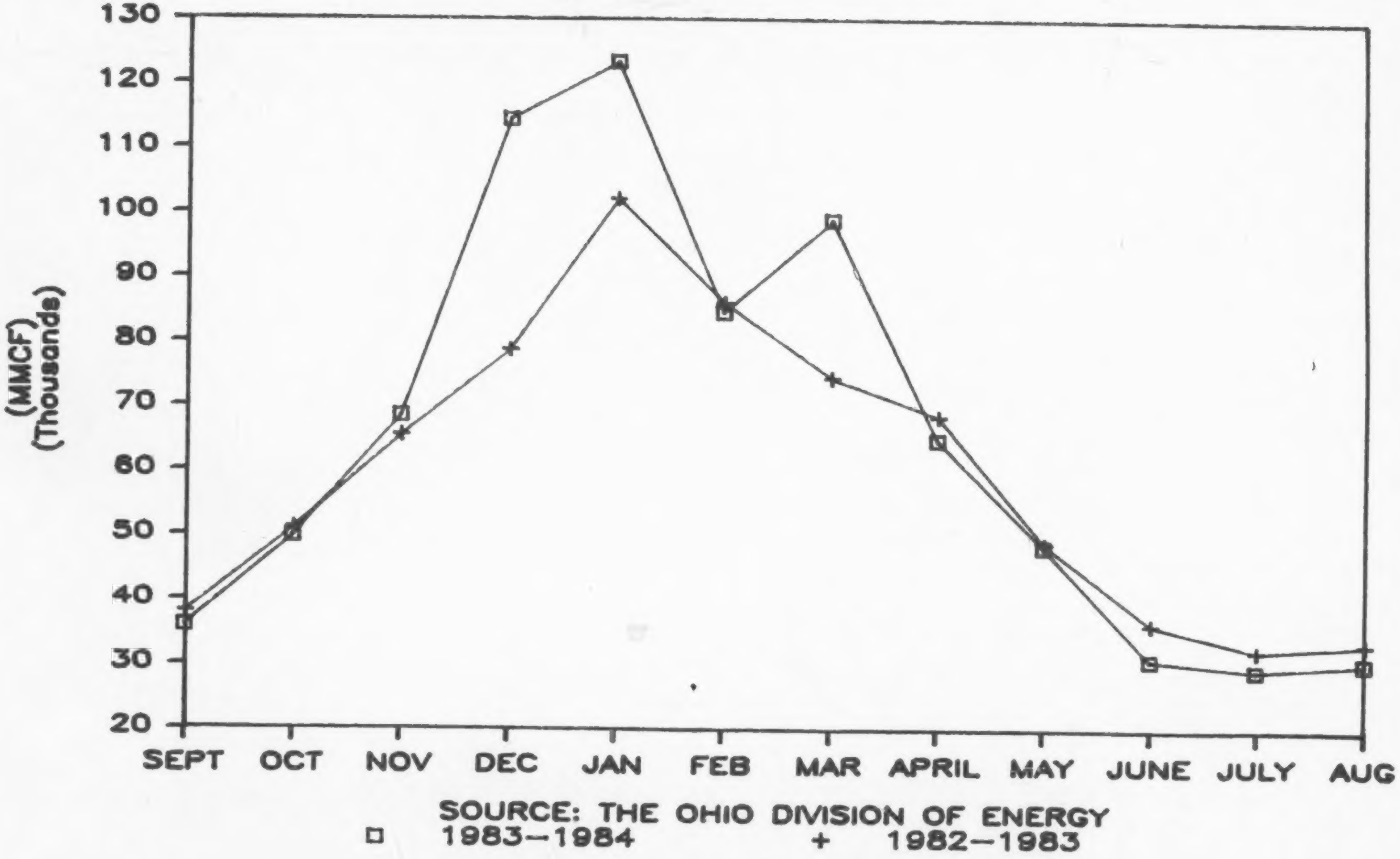
□ 1983–1984 + 1982–1983

FIG. 7C. OHIO INDUSTRIAL SECTOR NATURAL GAS CONSUMPTION
1982 - 1983 VS. 1983 - 1984



SOURCE: THE OHIO DIVISION OF ENERGY

FIG. 7D. TOTAL OHIO NATURAL GAS CONSUMPTION
1982 - 1983 VS. 1983 - 1984



SOURCE: THE OHIO DIVISION OF ENERGY

Fig. 7E Monthly Gas Consumption

January 1970 – August 1984

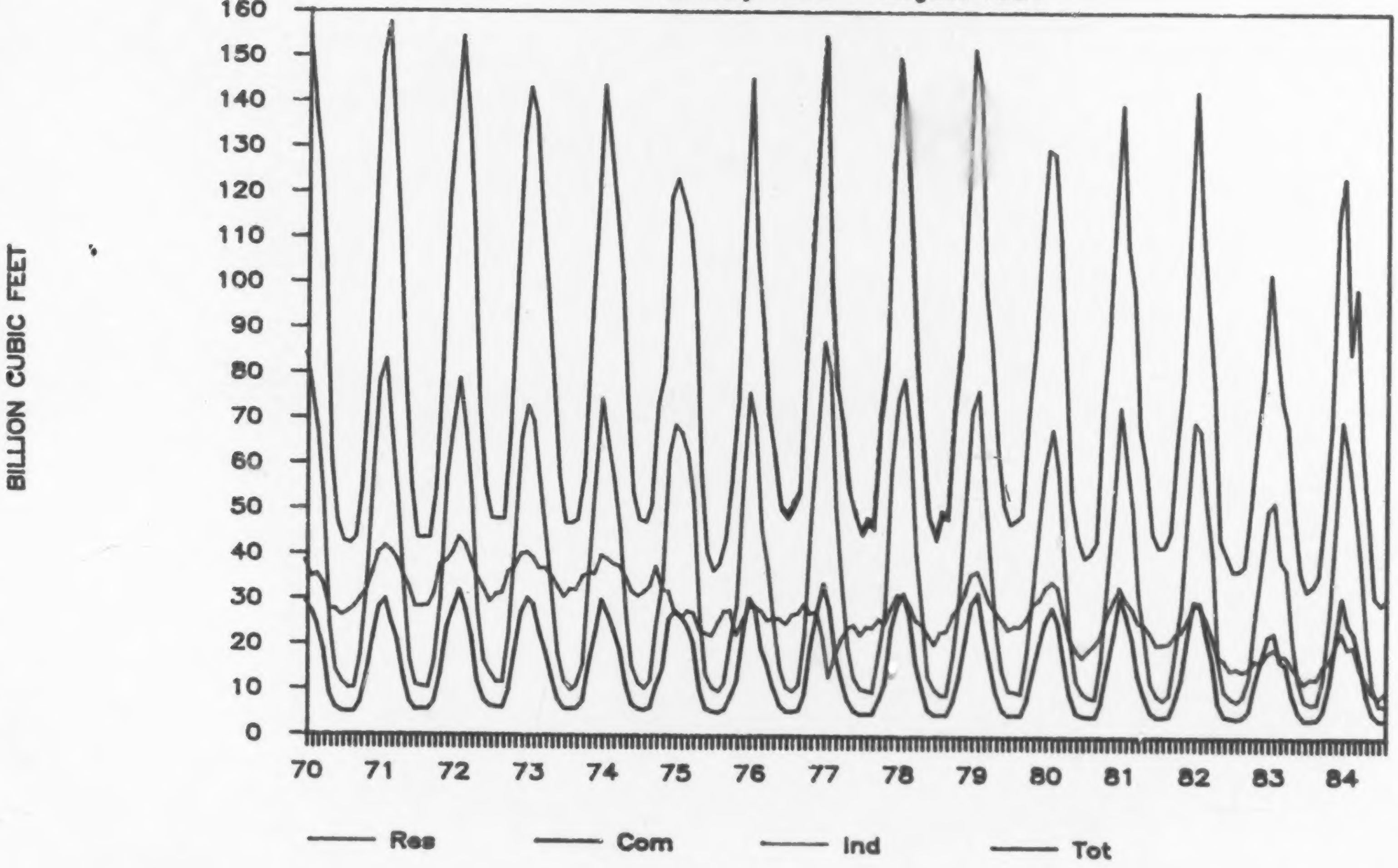


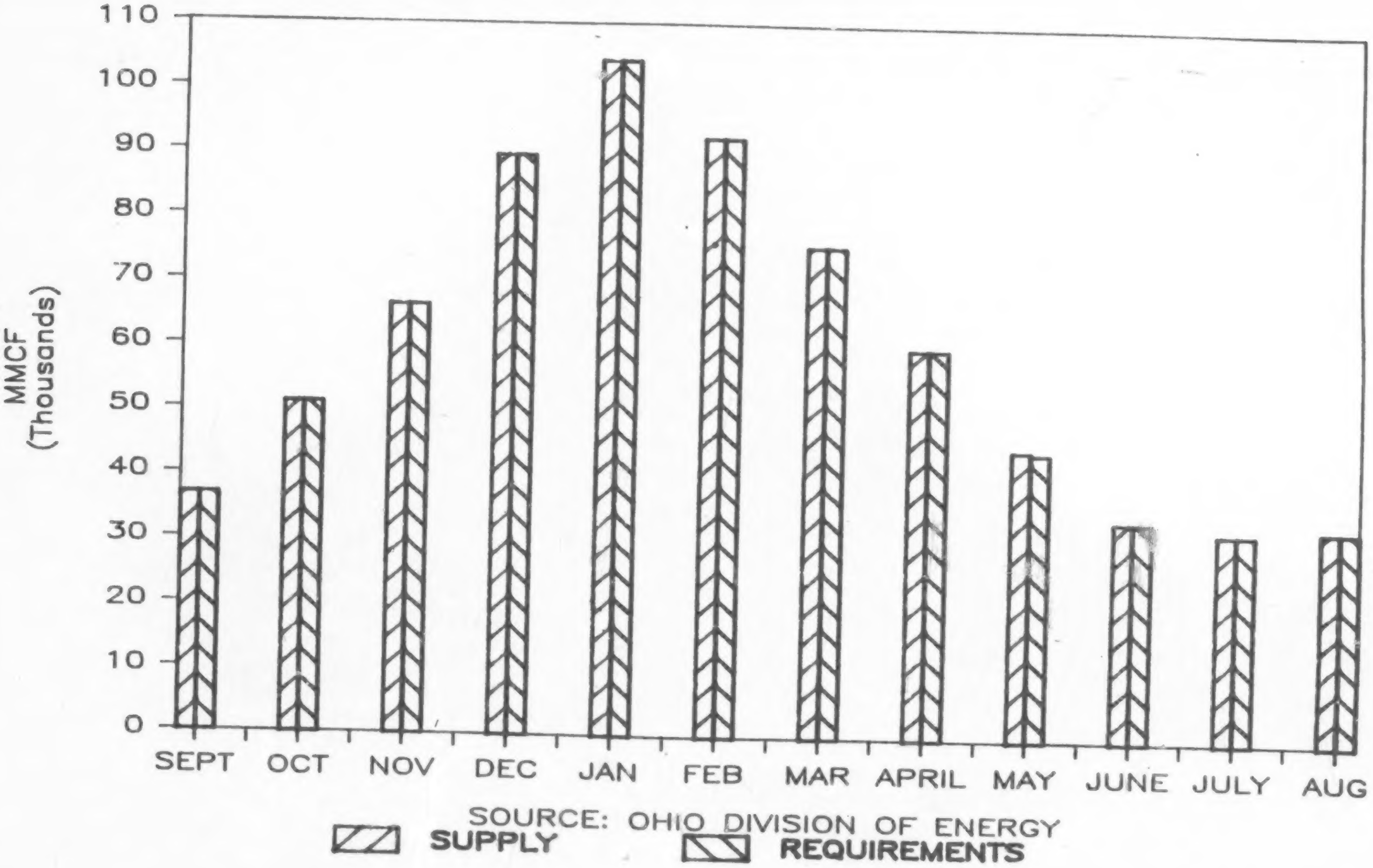
Table 12. Projected Aggregate Supply and Requirements for Natural Gas for Eight Major Utilities
September 1984 - August 1985
(MMCF)

	Supply	Demand	Deficiency	Percent Deficiency
SEPTEMBER	36884	36884	0	0.00
OCTOBER	51163	51163	0	0.00
NOVEMBER	66438	66438	0	0.00
DECEMBER	89699	89680	-19	-0.02
JANUARY	104356	104338	-18	-0.02
FEBRUARY	92443	92421	-22	-0.02
MARCH	75910	75892	-18	-0.02
APRIL	60217	60210	-7	-0.01
MAY	44780	44421	-359	-0.81
JUNE	34009	34009	0	0.00
JULY	32365	32365	0	0.00
AUGUST	33092	33092	0	0.00
TOTALS				
SUMMER	292510	292144	-366	-0.13
WINTER	428846	428769	-77	-0.02
ANNUAL	721356	720913	-443	-0.06

NOTE: A positive deficiency indicates a shortage;
A negative deficiency indicates a surplus.

SOURCE: ODOE FORM SG-1 and the OHIO DIVISION OF ENERGY

FIG 8. PROJECTED SUPPLY AND REQUIREMENTS OF NATURAL GAS BY SECTOR, TOTAL OF EIGHT MAJOR COMPANIES (SEPTEMBER 1984 - AUGUST 1985)



SOURCE: OHIO DIVISION OF ENERGY

TABLE 13 Comparison Between One Year of Actual and Forecast Demand for Eight Major Ohio Utilities by Sector (MMCF)

MONTH/YEAR	DEGREE DAYS	RESIDENTIAL REQUIREMENT	COMMERCIAL REQUIREMENT	INDUSTRIAL REQUIREMENT	OTHER REQUIREMENT	STORAGE (IN)	TOTAL REQUIREMENT	DEFICIENCY
9/84	87	8356	3957	12943	2958	8670	36884	0
9/83	87	7402	3767	12607	3348	8956	36080	0
	0.0%	12.9%	5.0%	2.7%	-11.6%	-3.2%	2.2%	0.0%
10/84	334	14085	6148	14568	9371	6991	51163	0
10/83	334	12896	5582	15503	9083	6933	49997	0
	0.0%	9.2%	10.1%	-6.0%	3.2%	0.8%	2.3%	0.0%
11/84	690	27185	12061	15659	11553	0	66438	0
11/83	686	26978	11725	16695	11266	2003	68668	0
	0.6%	0.8%	2.7%	-6.2%	2.5%	-100.0%	-3.2%	0.0%
12/84	1052	43221	19299	17155	10005	0	89680	-19
12/83	1028	47401	20872	20184	26128	0	114585	0
	2.3%	-8.8%	-7.5%	-15.0%	-61.7%	0.0%	-21.7%	999.9%
1/85	1141	54362	24050	18854	5746	1326	106338	-18
1/84	1124	69695	30538	22979	337	0	123549	0
	1.5%	-22.0%	-21.2%	-18.0%	1605.0%	999.9%	-15.5%	999.9%
2/85	980	52473	23573	18885	-3036	1326	92421	-22
2/84	977	61863	24405	19460	-21401	509	84756	0
	0.3%	-15.2%	-3.4%	-3.0%	82.1%	160.5%	9.0%	999.9%
3/85	823	43003	19043	17252	-3406	0	75892	-18
3/84	814	51212	22273	19863	5731	2	99081	0
	1.1%	-16.0%	-14.5%	-13.1%	-159.4%	-100.0%	-23.4%	999.9%
4/85	735	30174	13413	14876	-6236	7983	60210	-7
4/84	455	38993	16504	15009	-14399	8950	65057	0
	61.5%	-22.6%	-18.7%	-0.9%	56.7%	-10.8%	-7.5%	999.9%
5/85	202	17345	7726	12575	-3640	10417	44421	-359
5/84	196	21988	8990	12161	-4915	10301	48525	0
	3.1%	-21.1%	-14.1%	3.4%	25.9%	1.1%	-8.5%	999.9%
6/85	30	9491	4439	11090	-1707	9896	34009	0
6/84	29	10876	4903	9796	-4229	9698	31044	0
	3.4%	-12.7%	-9.5%	21.4%	59.6%	2.0%	9.6%	0.0%
7/85	5	7301	3410	11120	905	9629	32365	0
7/84	5	7053	3562	8644	705	9461	29425	0
	0.0%	3.5%	-4.3%	28.6%	28.4%	1.8%	10.0%	0.0%
8/85	11	6803	3187	11085	2220	8997	33092	0
8/84	11	6924	3480	9796	1069	9477	30744	0
	0.0%	-1.7%	-8.4%	21.3%	107.7%	-5.1%	7.6%	0.0%
SUMMER TOTAL								
	1406	93555	42278	89857	3871	62583	292144	-366
	1117	106132	46788	83514	-9338	63776	290872	0
	25.7%	-11.9%	-9.6%	7.6%	141.5%	-1.9%	0.4%	999.9%
WINTER TOTAL								
	4684	220244	98806	87805	20062	2652	428769	-77
	4629	257149	109813	99181	21981	2514	490639	0
	1.2%	-14.4%	-10.0%	-11.5%	-8.7%	5.5%	-12.6%	999.9%
YEAR TOTAL								
	6090	313799	140284	177662	23933	65235	720913	-443
	5746	363281	156601	182695	12643	66290	781511	0
	6.0%	-13.6%	-10.4%	-2.8%	89.3%	-1.6%	-7.8%	999.9%

NOTE: (1) WINTER TOTAL IS A SUM OF THE VALUES IN NOVEMBER, DECEMBER, JANUARY, FEBRUARY, AND MARCH

(2) 999.9% REPRESENTS AN INFINITE PERCENTAGE CHANGE RESULTING FROM AN INCREASE FROM A ZERO VALUE TO SOME NON-ZERO VALUE AND THUS A DIVISION BY ZERO.

(3) A POSITIVE DEFICIENCY INDICATES SHORTAGE, A NEGATIVE DEFICIENCY INDICATES SURPLUS.

FIG. 9. PROJECTED REQUIREMENTS OF NATURAL GAS BY SECTOR
EIGHT MAJOR COMPANIES
(NOVEMBER 1984 - OCTOBER 1985)

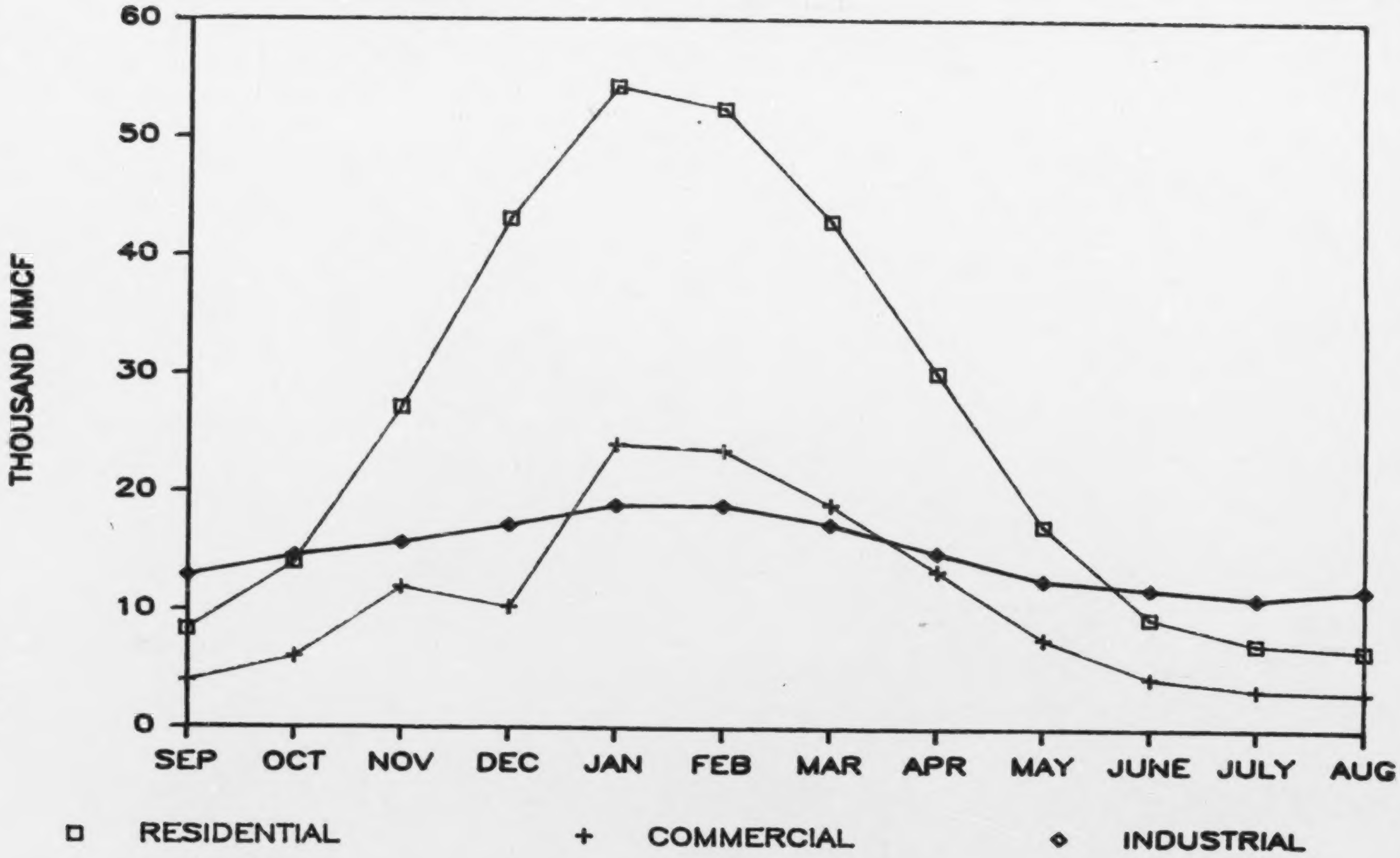


TABLE 14 Comparison Between One Year of Actual and Forecast Supply for Eight Major Ohio Gas Utilities by Source (MMCF)

MO/YR	COLUMBIA GAS	CONSOLID-ATED GAS	LAWREN-CEBURG	MICH. WISC.	PANHANDLE EAST	TENN. GAS	TEXAS EASTERN	TEXAS GAS	EMERG GAS	OHIO PRODUCT	SNG	STORAGE/ PROPANE	OTHER	TOTAL SUPPLIES
9/84	11285	13007	2055	147	4296	110	600	0	0	5240	1	165	-30	36884
9/83	9404	12605	1956	76	4255	122	730	0	0	5200	1344	145	235	36080
	20.0%	3.2%	5.1%	93.4%	1.0%	-9.8%	-17.8%	0.0%	0.0%	0.8%	-99.9%	13.8%	-112.8%	2.2%
10/84	18768	18808	2364	94	4698	135	620	13	0	5290	0	170	203	51163
10/83	17358	16890	2710	88	4569	136	799	13	0	5069	1045	189	331	49997
	8.1%	11.4%	-12.8%	6.8%	2.8%	-0.7%	-22.4%	0.0%	0.0%	4.4%	-100.0%	-10.1%	-38.7%	2.3%
11/84	31468	8349	2755	104	4697	126	610	30	0	5385	1243	11365	306	66430
11/83	28186	14077	3787	89	4612	128	694	27	0	5303	2727	8648	390	68660
	11.6%	-40.7%	-27.3%	16.9%	1.8%	-1.6%	-12.1%	11.1%	0.0%	1.5%	-54.4%	31.4%	-21.5%	-3.2%
12/84	44803	14448	2884	121	5054	150	620	46	0	5360	1111	14705	397	89699
12/83	55412	19918	3881	125	5335	149	669	53	0	5321	3583	19846	293	114585
	-19.1%	-27.5%	-25.7%	-3.2%	-5.3%	0.7%	-7.3%	-13.2%	0.0%	0.7%	-69.0%	-25.9%	35.5%	-21.7%
1/85	55497	17301	3014	104	5073	150	630	49	0	5301	1111	18028	379	104356
1/84	61160	24434	4672	130	5404	160	671	55	0	4780	3829	18033	221	123549
	-9.3%	-29.2%	-35.5%	-20.0%	-6.1%	-6.3%	-6.1%	-10.9%	0.0%	10.9%	-71.0%	-0.0%	71.5%	-15.5%
2/85	46694	19672	2988	158	4576	140	570	41	0	5260	1004	10959	381	92443
2/84	39995	17184	4138	104	4620	148	557	35	0	4487	3605	9587	296	84756
	16.7%	14.5%	-27.8%	51.9%	-1.0%	-5.4%	2.3%	17.1%	0.0%	17.2%	-72.1%	14.3%	28.7%	9.1%
3/85	35591	15947	3364	276	4846	150	630	35	0	5233	1132	8719	-11	75910
3/84	47165	22163	4683	115	4900	160	649	41	0	4788	2946	10941	538	99081
	-24.5%	-28.0%	-28.2%	140.0%	-1.1%	-6.3%	-2.9%	-14.6%	0.0%	9.3%	-61.6%	-20.3%	-102.1%	-23.4%
4/85	23659	21513	2706	259	4464	150	610	21	0	5307	1006	535	-13	60217
4/84	25812	23252	3407	95	4405	151	680	21	0	4750	1265	532	687	65057
	-8.3%	-7.5%	-20.6%	172.6%	1.3%	-0.7%	-10.3%	0.0%	0.0%	11.7%	-20.5%	0.6%	-101.9%	-7.4%
5/85	13292	17362	2495	193	4449	150	630	12	0	4908	1039	230	20	44780
5/84	14786	17886	2618	270	4436	151	799	11	0	5395	1419	438	316	48525
	-10.1%	-2.9%	-4.7%	-28.5%	0.3%	-0.7%	-21.2%	9.1%	0.0%	-9.0%	-26.8%	-47.5%	-93.7%	-7.7%
6/85	7488	13022	90	149	4192	115	575	7	0	4915	1006	165	2285	34009
6/84	7743	13396	2148	267	633	69	559	6	0	4907	1171	167	-22	31044
	-3.3%	-2.8%	-95.8%	-44.2%	562.2%	66.7%	2.9%	16.7%	0.0%	0.2%	-14.1%	-1.2%	10486.4%	9.6%
7/85	5944	11722	93	127	4337	109	632	6	0	4909	1076	170	3240	32365
7/84	6879	10316	283	208	2541	112	601	6	0	5640	1149	176	1514	29425
	-13.6%	13.6%	-67.1%	-38.9%	70.7%	-2.7%	5.2%	0.0%	0.0%	-13.0%	-6.4%	-3.4%	114.0%	10.0%
8/85	6861	11671	93	98	4406	118	740	7	0	4816	1076	165	3041	33092
8/84	6446	12815	90	293	504	114	718	6	0	5828	1161	172	2597	30744
	6.4%	-8.9%	3.3%	-66.6%	774.2%	3.5%	3.1%	16.7%	0.0%	-17.4%	-7.3%	-4.1%	17.1%	7.6%
SUMMER TOTAL	87297	107105	9896	1067	30842	887	4407	74	0	35385	5204	1600	8746	292510
	88428	107160	13212	1297	21343	855	4886	71	0	36789	9354	1819	5658	290872
	-1.3%	-0.1%	-25.1%	-17.7%	44.5%	3.7%	-9.8%	4.2%	0.0%	-3.8%	-44.4%	-12.0%	54.6%	0.6%
WINTER TOTAL	214053	75717	15005	763	24244	716	3060	201	0	26539	5601	63776	1452	428846
	231918	97776	21161	563	24871	745	3240	211	0	24679	16690	67055	1730	490639
	-7.7%	-22.6%	-29.1%	35.5%	-2.5%	-3.9%	-5.6%	-4.7%	0.0%	7.5%	-66.4%	-4.9%	-16.1%	-12.6%
YEAR TOTAL	301350	182822	24901	1830	55086	1603	7467	275	0	61924	10805	65376	10198	721356
	320346	204936	34373	1860	46214	1600	8126	282	0	61468	26044	68874	7388	781511
	-5.9%	-10.8%	-27.6%	-1.6%	19.2%	0.2%	-8.1%	-2.5%	0.0%	0.7%	-58.5%	-5.1%	38.0%	-7.7%

—NOTE: (1) WINTER TOTAL IS A SUM OF THE VALUES IN NOVEMBER, DECEMBER, JANUARY, FEBRUARY, AND MARCH.

(2) 999.9% REPRESENTS AN INFINITE PERCENTAGE CHANGE RESULTING FROM AN INCREASE FROM A ZERO VALUE TO SOME NON-ZERO VALUE AND THUS A DIVISION BY ZERO.

Table 15: Independent Forecasts of Gas Supply and Demand for the Eight Major Ohio Gas Utilities
November 1984 - March 1985
(MMCF)

	Normal Weather			10% Colder Than Normal Weather		
	Supply	Demand	Surplus (Deficiency)	Supply	Demand	Surplus (Deficiency)
Cincinnati Gas & Electric	48,924	54,600	(5,676)	52,437	56,481	(4,044)
Columbia Gas	147,312	172,600	(25,288)	156,791	181,014	(24,223)
Dayton Power & Light	34,777	38,400	(3,623)	37,254	40,138	(2,884)
East Ohio Gas	186,083	199,200	(13,117)	197,479	208,066	(10,587)
National Gas	6,866	6,866	0	7,190	7,190	0
Ohio Gas	4,391	4,391	0	4,719	4,719	0
River Gas	2,702	2,702	0	2,856	2,856	0
West Ohio Gas	7,913	7,913	0	8,419	8,419	0
Total	438,968	486,672	(47,704)	467,145	508,883	(41,738)

Source: November 1984 ODOE Form SG-2 of reporting utilities, and the Ohio Division of Energy.

Table 16: Independent Forecast of Annual Natural Gas End Use Requirements, Calendar Year 1984 (TBTU)

	Actual 1983	Lower 95% Confidence Limit	Forecast 1985	Upper 95% Confidence Limit	Forecast % Change
Residential	319.4	343.9	382.1	420.3	19.63
Commercial	139.4	142.7	158.6	174.5	13.77
Industrial	191.7	162.2	180.2	198.2	-6.00
Other*	7.7	4.0	8.0	12.0	3.90
Total	658.2	652.8	728.9	805.0	10.74

Source: Ohio Division of Energy

*Other includes transportation and electric utilities sectors.

Table 17: Independent Forecasts of Gas Supply and Demand for Cincinnati Gas and Electric Company November 1984 - March 1985 (MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]
November 1984	7,116	648	7,100	16	7,636	713	7,380	256
December 1984	10,560	947	12,500	(1,940)	11,337	1,042	12,909	(1,572)
January 1985	12,195	1,119	14,200	(2,005)	13,094	1,231	14,683	(1,589)
February 1985	10,423	921	10,800	(377)	11,163	1,013	11,198	(35)
March 1985	8,630	719	10,000	(1,370)	9,207	791	10,311	(1,104)
Total	48,924		54,600	(5,676)	52,437		56,481	(4,044)

Notes: Totals may not add due to independent rounding.
HDD - Heating Degree-Days.
Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: Cincinnati Gas & Electric's November ODOE Form SG-2, and the Ohio Division of Energy.

Table 18: Independent Forecasts of Gas Supply and Demand for Columbia Gas of Ohio November 1984 - March 1985 (MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]
November 1984	23,349	589	25,000	(1,651)	24,432	648	26,041	(1,609)
December 1984	30,661	930	38,500	(7,839)	32,456	1,023	40,141	(7,685)
January 1985	36,345	1,192	42,500	(6,155)	38,765	1,311	44,599	(5,834)
February 1985	31,376	1,146	33,000	(1,624)	33,749	1,261	35,029	(1,280)
March 1985	25,581	908	33,600	(8,019)	27,389	999	35,205	(7,816)
Total	147,312		172,600	(25,288)	156,791		181,014	(24,223)

Notes: Totals may not add due to independent rounding.
HDD - Heating Degree-Days.
Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: Columbia Gas of Ohio's November ODOE Form SG-2, and the Ohio Division of Energy.

Table 19: Independent Forecasts of Gas Supply and Demand for Dayton Power & Light Company
November 1984 - March 1985
(MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)	Supply	HDD[2]	Demand	Surplus[3] (Deficiency)
November 1984	4,770	487	4,600	170	5,011	536	4,785	226
December 1984	7,068	896	7,400	(332)	7,671	986	7,740	(69)
January 1985	8,570	1,161	10,300	(1,730)	9,146	1,277	10,740	(1,594)
February 1985	8,526	1,152	9,000	(474)	9,104	1,267	9,437	(333)
March 1985	5,843	891	7,100	(1,257)	6,322	980	7,438	(1,116)
Total	34,777		38,400	(3,623)	37,254		40,138	(2,884)

Notes: Totals may not add due to independent rounding.
HDD - Heating Degree-Days.
Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: Dayton Power & Light Company's November ODOE Form SG-2, and the Ohio Division of Energy

Table 20: Independent Forecasts of Gas Supply and Demand for East Ohio Gas Company
November 1984 - March 1985
(MMCF)

	Normal Weather				10% Colder Than Normal Weather			
	Supply	HDD[2]	Demand	Surplus (Deficiency)	Supply	HDD[2]	Demand	Surplus (Deficiency)[3]
November 1984	28,785	567	31,000	(2,215)	30,405	624	32,035	(1,630)
December 1984	39,055	956	44,900	(5,845)	41,528	1,052	46,645	(5,117)
January 1985	44,800	1,213	48,000	(3,200)	47,685	1,334	50,214	(2,529)
February 1985	39,414	1,176	37,500	1,914	41,824	1,294	39,646	2,178
March 1985	34,029	946	37,800	(3,771)	36,037	1,041	39,526	(3,489)
Total	186,083		199,200	(13,117)	197,479		208,066	(10,587)

Notes: Totals may not add due to independent rounding.
HDD - Heating Degree-Days.
Numbers within parentheses indicate deficiency. Projected deficiency levels can be met with gas in storage.

Source: East Ohio Gas Company's November ODOE Form SG-2, and the Ohio Division of Energy

APPENDIX A: ELECTRICITY

Table A-1: Allegheny Power System Forecast of Electric Energy Demand (1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
November	2,653	2,768	4.33	2,828	6.60
December	3,090	3,076	-0.45	3,141	1.65
January	3,204	3,243	1.22	3,329	3.90
February	2,802	2,956	5.50	2,976	6.21
March	3,051	3,033	-0.59	3,120	2.26
April	2,648	2,757	4.12	2,791	5.40
May	2,667	2,650	-0.64	2,758	3.41
June	2,662	2,636	-0.98	2,749	3.27
July	2,616	2,837	8.45	2,875	9.90
August	2,843	2,882	1.37	2,941	3.45
September	2,540	2,722	7.17	2,758	8.58
October	2,646	2,764	4.46	2,876	8.69

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-2: American Electric Power
Forecast of Electric Energy Demand
(1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
November	6,711	7,230	7.73	7,058	5.17
December	8,051	7,958	-1.16	7,987	-0.79
January	8,290	8,741	5.44	8,387	1.17
February	7,201	7,982	10.85	7,361	2.22
March	7,904	7,816	-1.11	7,905	0.01
April	6,944	6,917	-0.39	6,951	0.10
May	6,823	6,788	-0.51	6,790	-0.48
June	7,102	6,893	-2.94	7,022	-1.13
July	7,110	7,308	2.78	7,536	5.99
August	7,801	7,463	-4.33	7,593	-2.67
September	6,564	6,834	4.11	6,752	2.86
October	6,732	7,068	4.99	6,755	0.34

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-3: Cincinnati Gas and Electric Forecast of Electric Energy Demand (1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
November	1,258	1,235	-1.83	1,297	3.10
December	1,547	1,380	-10.80	1,490	-3.68
January	1,575	1,465	-6.98	1,570	-0.32
February	1,304	1,312	0.61	1,364	4.60
March	1,443	1,338	-7.28	1,410	-2.29
April	1,231	1,154	-6.26	1,259	2.27
May	1,232	1,251	1.54	1,291	4.79
June	1,461	1,392	-4.72	1,391	-4.79
July	1,433	1,503	4.88	1,644	14.72
August	1,545	1,528	-1.10	1,629	5.44
September	1,246	1,280	2.73	1,374	10.27
October	1,241	1,225	-1.29	1,293	4.19

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-4: Cleveland Electric Illuminating Company Forecast of Electric Energy Demand (1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
November	1,399	1,496	6.93	1,501	7.29
December	1,617	1,598	-1.18	1,651	2.10
January	1,690	1,687	-0.18	1,753	3.73
February	1,514	1,688	11.49	1,593	5.22
March	1,657	1,633	-1.45	1,688	1.87
April	1,450	1,517	4.62	1,517	4.62
May	1,495	1,524	1.94	1,501	0.40
June	1,564	1,619	3.52	1,615	3.26
July	1,498	1,678	12.02	1,699	13.42
August	1,648	1,631	-1.03	1,700	3.16
September	1,504	1,561	3.79	1,540	2.39
October	1,506	1,522	1.06	1,518	0.80

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-5: Dayton Power and Light
Forecast of Electric Energy Demand
(1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
November	882	914	3.63	911	3.29
December	1,099	1,028	-6.46	1,076	-2.09
January	1,121	1,161	3.57	1,140	1.69
February	922	1,032	11.93	949	2.93
March	1,033	1,032	-0.10	1,044	1.06
April	859	894	4.07	919	6.98
May	843	894	6.05	885	4.98
June	921	921	0.00	992	7.71
July	920	1,009	9.67	1,100	19.57
August	1,000	980	-2.00	1,096	9.60
September	841	893	6.18	935	11.18
October	881	938	6.47	919	4.31

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-6: Ohio Edison Company
Forecast of Electric Energy Demand
(1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
November	1,968	1,944	-1.22	2,046	3.96
December	2,246	2,104	-6.32	2,209	-1.65
January	2,296	2,265	-1.35	2,328	1.39
February	2,028	2,055	1.33	2,098	3.45
March	2,247	2,092	-6.90	2,237	-0.45
April	1,954	1,880	-3.79	2,013	3.02
May	1,976	1,870	-5.36	2,012	1.82
June	2,058	1,936	-5.93	2,061	0.15
July	2,015	2,061	2.28	2,206	9.48
August	2,175	2,104	-3.26	2,224	2.25
September	1,871	1,919	2.57	2,051	9.62
October	1,949	2,015	3.39	2,089	7.18

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-7: Ohio Valley Electric Corporation Forecast of Electric Energy Demand (1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual
November	1,311	1,456	11.06
December	1,477	1,492	1.02
January	1,381	1,418	2.68
February	1,181	1,290	9.23
March	1,403	1,437	2.42
April	1,339	1,379	2.99
May	1,380	1,419	2.83
June	1,389	1,372	-1.22
July	950	1,481	55.89
August	953	1,481	55.40
September	932	1,344	44.21
October	1,054	1,380	30.93

Source: Form EIA-119M and the Ohio Division of Energy.

Table A-8: Toledo Edison Company Forecast of Electric Energy Demand (1000 MWH)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
November	638	627	-1.72	649	1.72
December	743	671	-9.69	708	-4.71
January	756	772	2.12	753	-0.40
February	644	734	13.98	664	3.11
March	724	725	0.14	706	-2.49
April	620	637	2.74	629	1.45
May	619	616	-0.48	628	1.45
June	658	642	-2.43	644	-2.13
July	656	679	3.51	696	6.10
August	704	694	-1.42	704	0.00
September	599	663	10.68	642	7.18
October	626	626	0.00	650	3.83

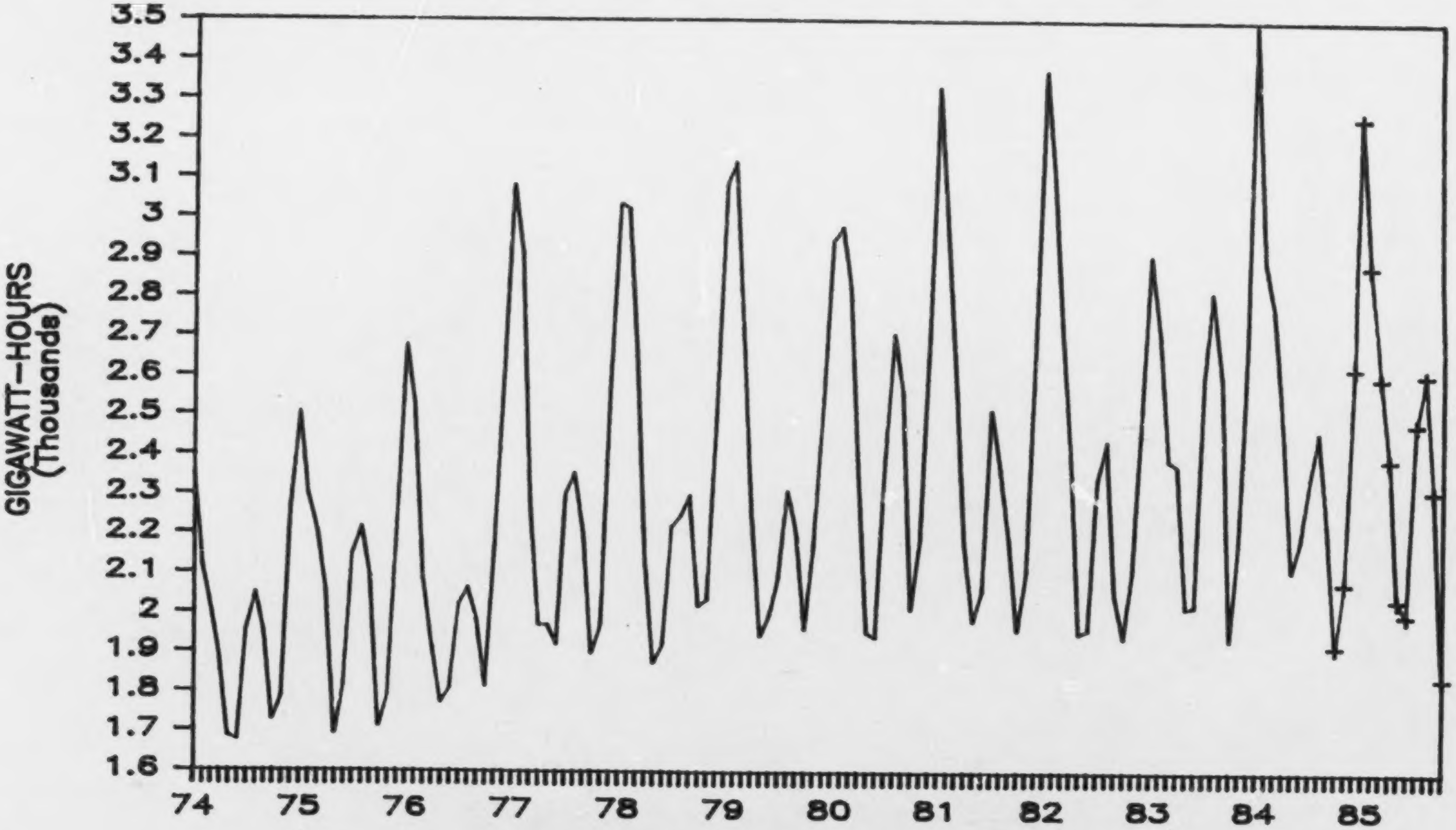
Source: Form EIA-119M and the Ohio Division of Energy.

Table A-9: Independent Forecast of Ohio Electricity Demand
Residential Sector
(1000 MWH)

Month	Lower 95% Confidence Limit	ODOE Forecast (1984-85)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
November	1,591	2,080	2,569	2,178	-4.5
December	2,118	2,624	3,131	2,727	-3.8
January	2,734	3,257	3,779	3,492	-6.7
February	2,340	2,879	3,417	2,891	-0.4
March	2,044	2,598	3,152	2,771	-6.2
April	1,822	2,392	2,961	2,448	-2.3
May	1,419	2,038	2,658	2,111	-3.5
June	1,331	2,000	2,663	2,190	-8.7
July	1,797	2,484	3,170	2,350	5.7
August	1,912	2,608	3,303	2,466	5.8
September	1,609	2,313	3,017	2,230	3.7
October	1,127	1,840	2,553		

Note: The forecast is based upon monthly summary statistics published by the Ohio Electric Utility Institute, for the eight major investor-owned electric utilities (excluding OVEC).

FIG. A-1. MONTHLY OHIO RESIDENTIAL ELECTRICITY CONSUMPTION ACTUAL AND PROJECTED (JANUARY 1974 - OCTOBER 1985)



SOURCE: OHIO ELECTRIC UTILITY INSTITUTE

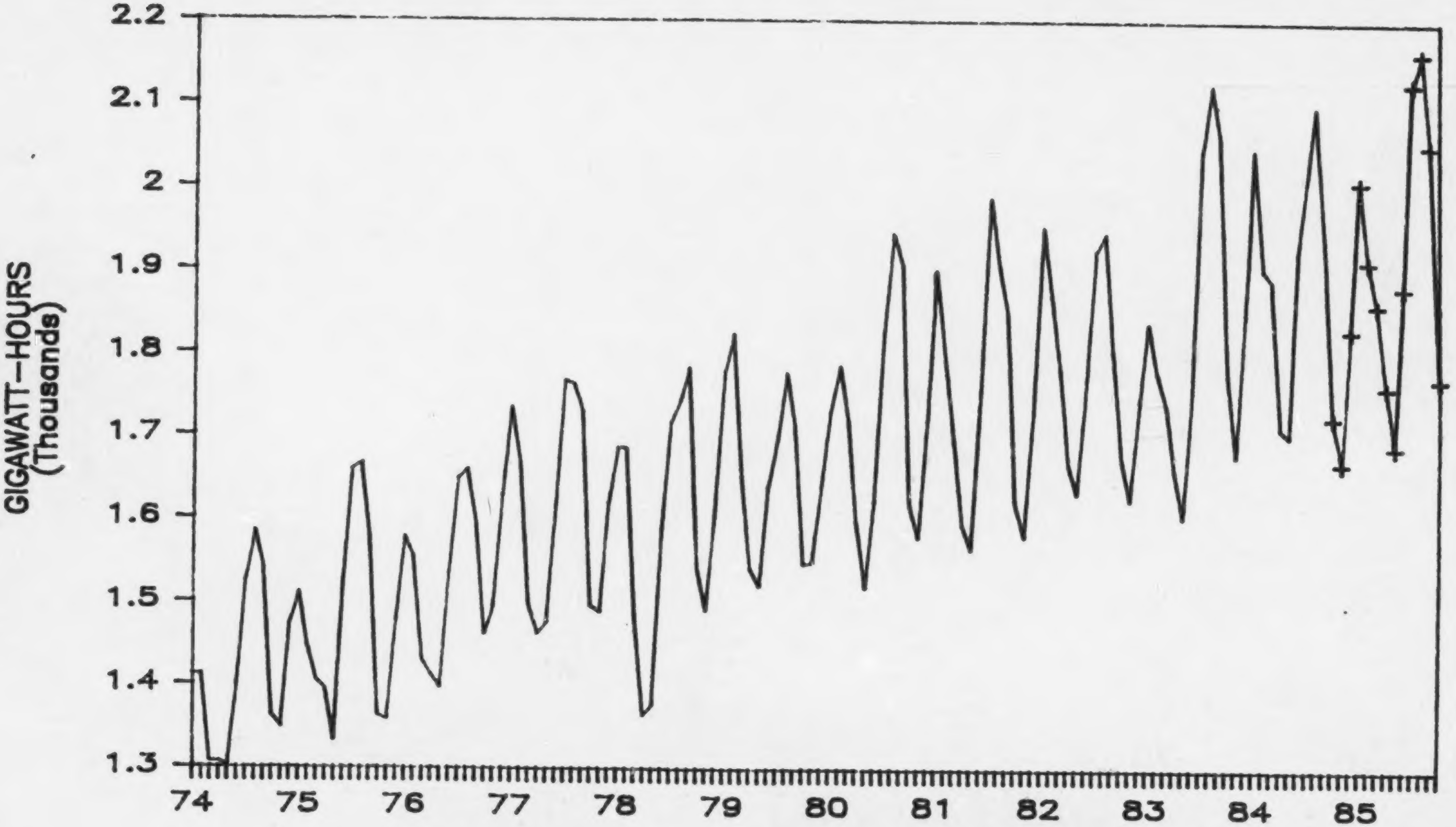
—— ACTUAL + FORECAST

Table A-10: Independent Forecast of Ohio Electricity Demand
Commercial Sector
(1000 MWH)

Month	Lower 95% Confidence Limit	ODOE Forecast (1984-85)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
November	1,492	1,669	1,847	1,678	-0.5
December	1,646	1,829	2,012	1,850	-1.1
January	1,820	2,008	2,195	2,048	-2.0
February	1,720	1,912	2,104	1,902	0.5
March	1,663	1,859	2,055	1,889	-1.6
April	1,560	1,761	1,961	1,711	2.9
May	1,472	1,689	1,907	1,702	-0.8
June	1,648	1,881	2,114	1,924	-2.2
July	1,890	2,127	2,364	2,013	5.7
August	1,925	2,163	2,401	2,099	3.0
September	1,813	2,052	2,291	1,944	5.6
October	1,530	1,770	2,010		

Note: The forecast is based upon monthly summary statistics published by the Ohio Electric Utility Institute, for the eight major investor-owned electric utilities (excluding OVEC).

FIG. A-2. MONTHLY OHIO COMMERCIAL ELECTRICITY CONSUMPTION ACTUAL AND PROJECTED (JANUARY 1974 - OCTOBER 1985)



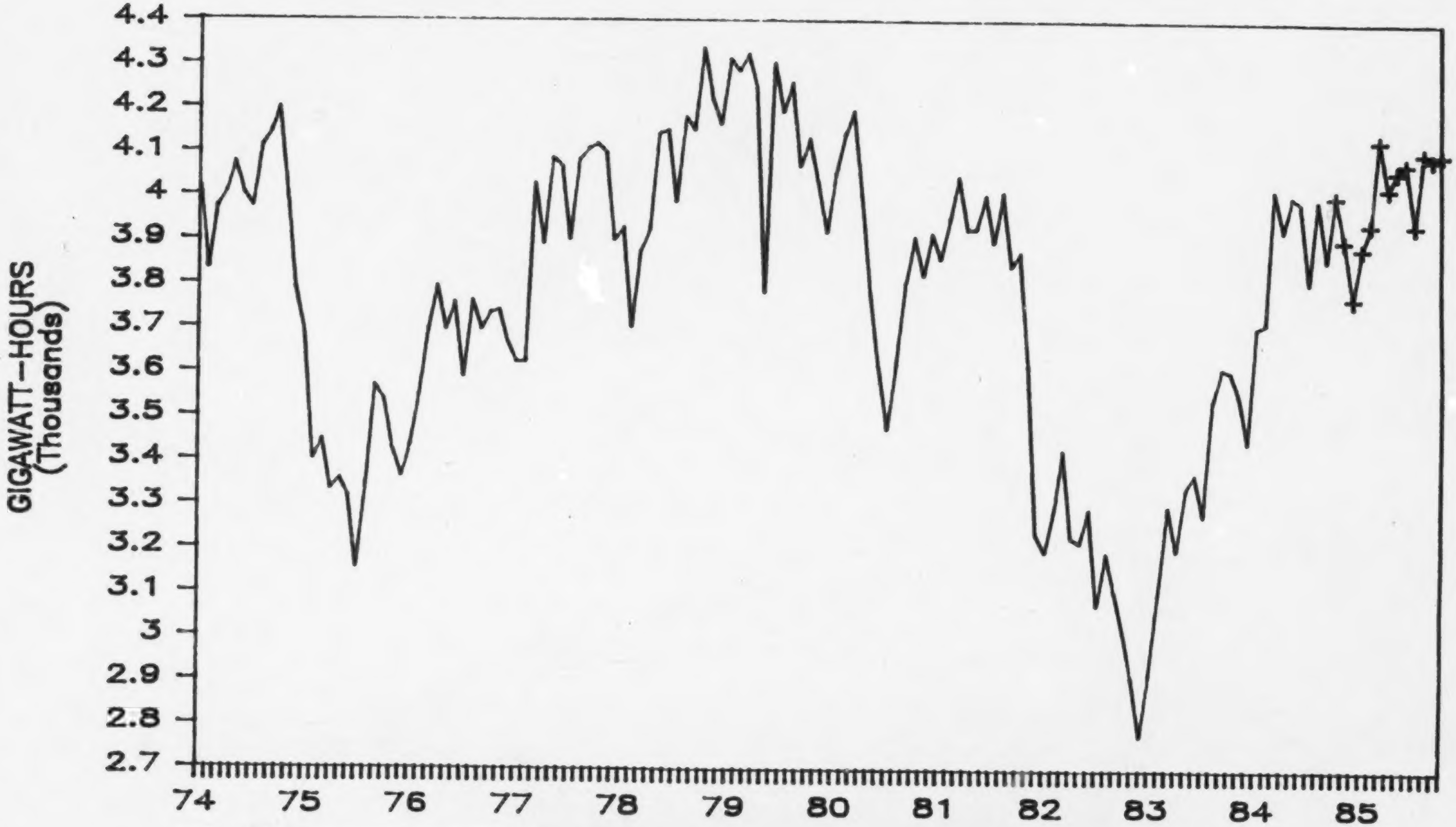
SOURCE: OHIO ELECTRIC UTILITY INSTITUTE

Table A-11: Independent Forecast of Ohio Electricity Demand
Industrial Sector
(1000 MWH)

Month	Lower 95% Confidence Limit	ODOE Forecast (1984-85)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
November	3,297	3,904	4,510	3,554	9.8
December	3,125	3,773	4,421	3,447	9.5
January	3,199	3,887	4,574	3,708	4.8
February	3,218	3,943	4,667	3,719	6.0
March	3,373	4,133	4,893	4,020	2.8
April	3,230	4,024	4,818	3,927	2.5
May	3,217	4,063	4,910	4,006	1.4
June	3,184	4,081	4,977	3,992	2.2
July	2,998	3,941	4,885	3,809	3.5
August	3,117	4,105	5,094	3,999	2.7
September	3,061	4,092	5,124	3,860	6.0
October	3,030	4,103	5,175		

Note: The forecast is based upon monthly summary statistics published by the Ohio Electric Utility Institute, for the eight major investor-owned electric utilities (excluding OVEC).

FIG. A-3. MONTHLY OHIO INDUSTRIAL ELECTRICITY CONSUMPTION
ACTUAL AND PROJECTED (JANUARY 1974 - OCTOBER 1985)



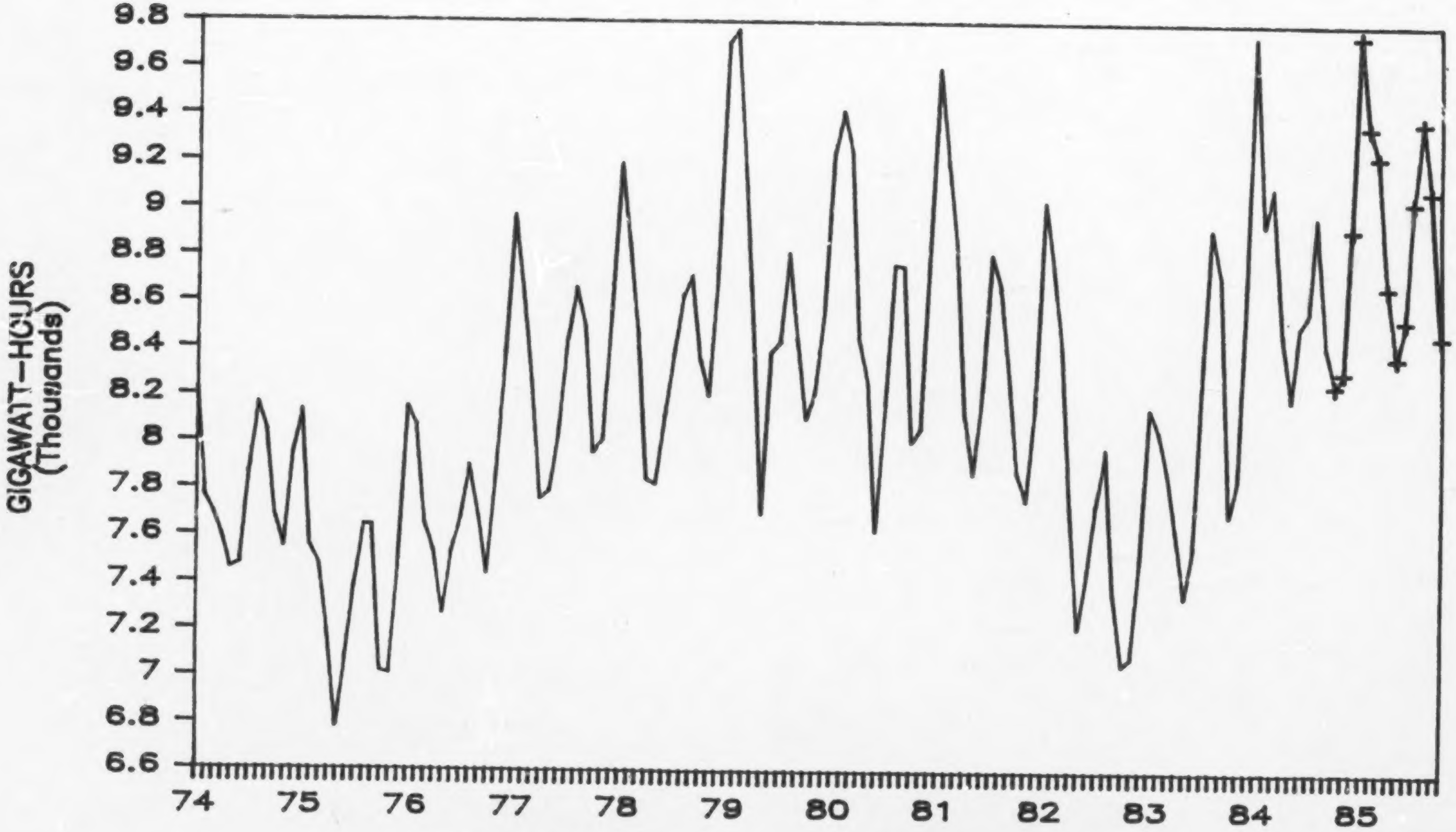
SOURCE: OHIO ELECTRIC UTILITY INSTITUTE
—— ACTUAL + PROJECTED

Table A-12: Independent Forecast of Ohio Electricity Demand
All Sectors
(1000 MWH)

Month	Lower 95% Confidence Limit	ODOE Forecast (1984-85)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
November	7,087	8,315	9,542	7,854	5.9
December	7,610	8,922	1,023	8,705	2.5
January	8,359	9,751	11,144	9,745	0.1
February	7,895	9,362	10,830	8,937	4.8
March	7,695	9,234	10,773	9,105	1.4
April	7,068	8,676	10,284	8,467	2.5
May	6,652	8,376	10,100	8,192	2.2
June	6,702	8,535	10,368	8,505	0.4
July	7,107	9,043	10,978	8,571	5.5
August	7,350	9,383	11,416	8,974	4.6
September	6,962	9,088	11,215	8,414	8.0
October	6,251	8,466	10,682		

Note: The forecast is based upon monthly summary statistics published by the Ohio Electric Utility Institute, for the eight major investor-owned electric utilities (excluding OVEC).

FIG. A-4. MONTHLY TOTAL OHIO ELECTRICITY CONSUMPTION
ACTUAL AND PROJECTED (JANUARY 1974 - OCTOBER 1985)



SOURCE: OHIO ELECTRIC UTILITY INSTITUTE

—— ACTUAL + PROJECTED

APPENDIX B: NATURAL GAS

Table B-1: Cincinnati Gas and Electric Forecast of Natural Gas Requirements (MMCF)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
November	7,102	7,116	0.20	7,100	-0.03
December	13,409	10,560	-21.25	12,500	-6.78
January	13,641	12,195	-10.60	14,200	4.10
February	8,984	10,423	16.02	10,800	20.21
March	10,506	8,630	-17.86	10,000	-4.82
April	5,693	5,908	3.78	5,700	0.12
May	3,599	3,832	6.47	3,600	0.03
June	2,365	2,555	8.03	2,400	1.48
July	2,381	2,411	1.26	2,350	-1.30
August	2,441	2,401	-1.64	2,400	-1.68
September	*	2,514	*	2,600	*
October	*	3,758	*	3,900	*

*Actual figures were not available.

Source: ODOE Form SG-2. and the Ohio Division of Energy.

Table B-2: Columbia Gas of Ohio
Forecast of Natural Gas Requirements
(MMCF)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
November	23,973	23,349	-2.60	25,000	4.28
December	42,589	30,661	-28.01	38,500	-9.60
January	44,941	36,345	-19.13	42,500	-5.43
February	30,376	31,376	3.29	33,000	8.64
March	36,170	25,581	-29.28	33,600	-7.11
April	19,292	17,408	-9.77	19,000	-1.51
May	12,935	10,980	-15.11	13,000	0.50
June	7,296	7,092	-2.80	7,000	-4.06
July	7,110	6,916	-2.73	7,000	-1.55
August	7,321	7,561	3.28	7,300	-0.29
September	*	8,315	*	9,300	*
October	*	12,840	*	17,300	*

*Actual figures were not available.

Source: SG-2. Forms of the reporting utility and the Ohio Division of Energy.

Table B-3: Dayton Power and Light Forecast of Natural Gas Requirements (MMCF)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
November	4,528	4,770	5.34	4,600	1.59
December	6,781	7,068	4.23	7,400	9.13
January	10,545	8,570	-18.73	10,300	-2.32
February	7,817	8,526	9.07	9,000	15.13
March	7,421	5,843	-21.26	7,100	-4.33
April	5,664	4,608	-18.64	5,800	2.40
May	3,051	2,325	-23.80	3,000	-1.67
June	1,915	1,503	-21.51	1,900	-0.78
July	1,484	1,502	1.21	1,400	-5.66
August	1,526	1,648	7.99	1,400	-8.26
September	*	1,612	*	1,500	*
October	*	2,678	*	2,400	*

*Actual figures were not available.

Source: SG-2. Forms of the reporting utility and the Ohio Division of Energy.

Table B-4: East Ohio Gas
Forecast of Natural Gas Requirements
(MMCF)

Month	Actual Demand (1983-1984)	Utility Forecast (1984-1985)	%Change (Utility Forecast vs. Actual	ODOE Forecast (1984-1985)	%Change (ODOE Forecast vs. Actual)
November	29,703	28,785	-3.09	31,000	4.37
December	46,450	39,055	-15.92	44,900	-3.34
January	48,461	44,800	-7.55	48,000	-0.95
February	33,272	39,414	18.46	37,500	12.71
March	40,129	34,029	-15.20	37,800	-5.80
April	31,092	30,605	-1.57	31,500	1.31
May	26,189	26,005	-0.70	24,600	-6.07
June	17,491	20,429	16.80	18,000	2.91
July	16,548	18,559	12.15	16,700	0.92
August	17,344	18,225	5.08	17,400	0.32
September	*	20,462	*	18,900	*
October	*	26,161	*	26,100	*

*Actual figures were not available.

Source: SG-2. Forms of the reporting utility and the Ohio Division of Energy.

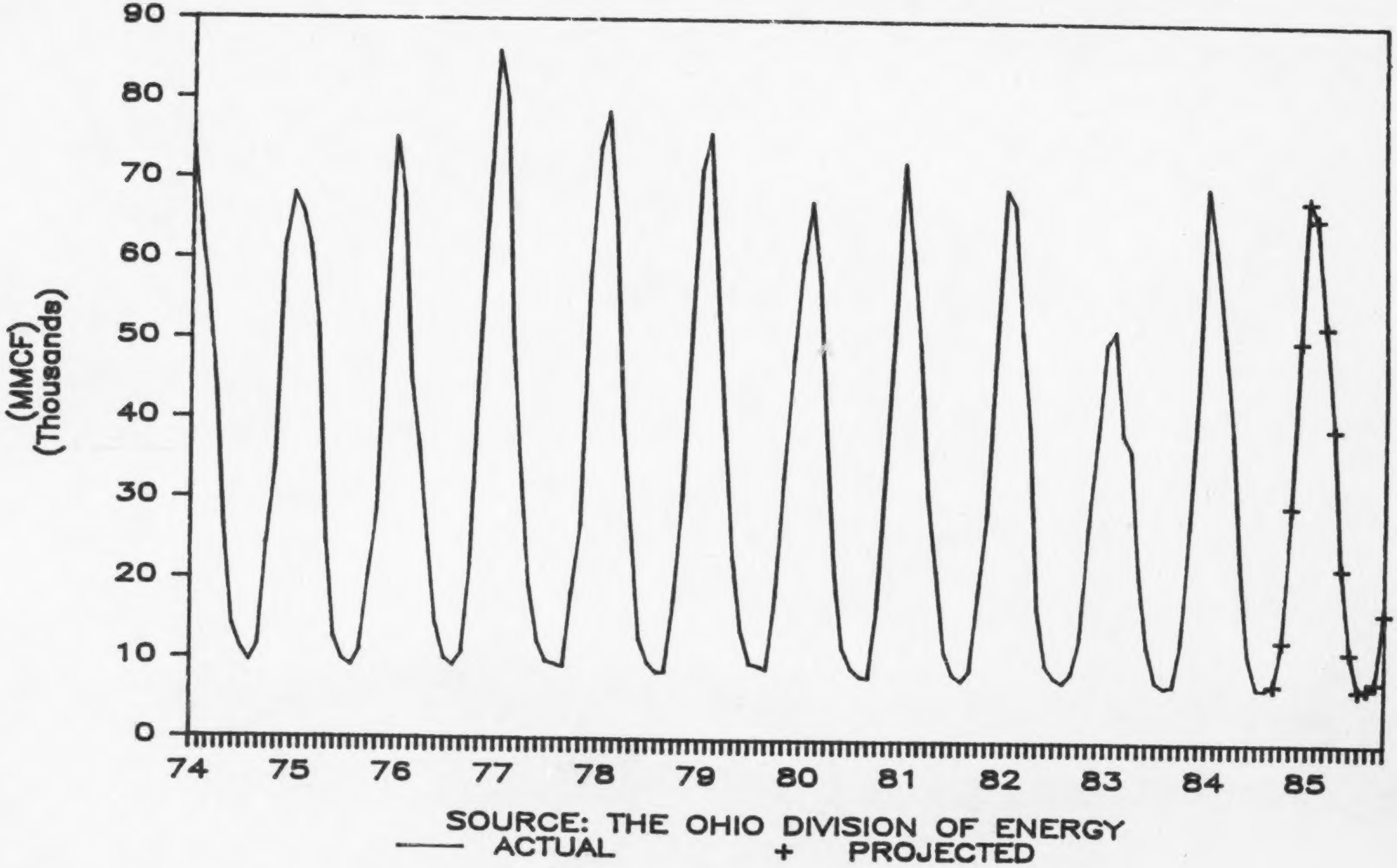
Table B-5: Independent Forecast of Ohio Natural Gas End User Requirements-Residential Sector (MMCF)

Month	Lower 95% Confidence Limit	Forecast (1984-1985)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
November	20,700	29,800	40,000	26,978	10.46
December	40,100	50,500	60,800	47,401	6.54
January	57,600	68,000	78,500	69,695	-2.43
February	55,300	65,800	76,300	61,863	6.36
March	41,800	52,300	62,800	51,212	2.12
April	31,000	39,500	47,900	38,993	1.30
May	18,600	22,100	27,600	21,988	0.51
June	7,900	11,700	15,600	10,876	7.58
July	5,000	7,000	9,000	7,053	-0.75
August	5,800	7,300	8,800	6,924	5.43
September	6,500	8,000	9,500	*	*
October	12,600	16,600	20,600	*	*

*Actual figures were not available.

Source: ODOE Form SG-1 and the Ohio Division of Energy.

FIG. B-1. MONTHLY OHIO RESIDENTIAL NATURAL GAS CONSUMPTION ACTUAL AND PROJECTED (JANUARY 1974 - OCTOBER 1985)



SOURCE: THE OHIO DIVISION OF ENERGY

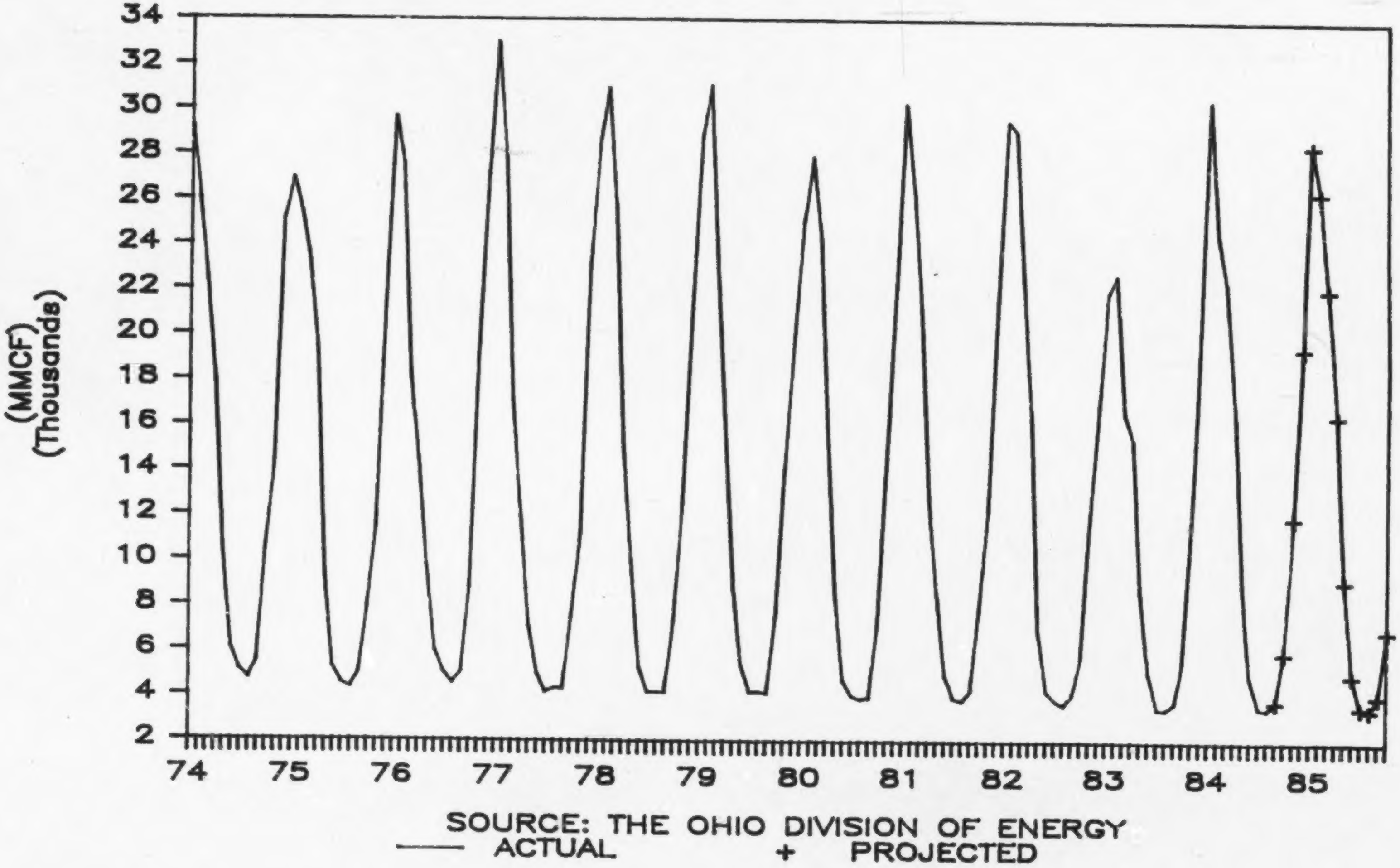
Table B-6: Independent Forecast of Ohio Natural Gas End User Requirements-Commercial Sector (MMCF)

Month	Lower 95% Confidence Limit	Forecast (1984-1985)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
November	10,000	12,000	14,000	11,725	2.35
December	17,000	19,500	22,000	20,872	-6.57
January	24,500	28,500	32,400	30,538	-6.67
February	22,400	26,400	30,300	24,405	8.17
March	18,100	22,100	26,000	22,273	-0.78
April	13,500	16,500	19,400	16,504	-0.02
May	7,500	9,200	11,500	8,990	2.34
June	4,300	5,000	6,400	4,903	1.98
July	2,800	3,600	4,300	3,562	1.07
August	2,800	3,500	4,200	3,480	0.57
September	3,500	4,100	4,600	*	*
October	5,300	7,000	8,700	*	*

*Actual figures were not available.

Source: ODOE Form SG-1 and the Ohio Division of Energy.

FIG. B-2. MONTHLY OHIO COMMERCIAL NATURAL GAS CONSUMPTION
ACTUAL AND PROJECTED (JANUARY 1974 - OCTOBER 1985)



SOURCE: THE OHIO DIVISION OF ENERGY

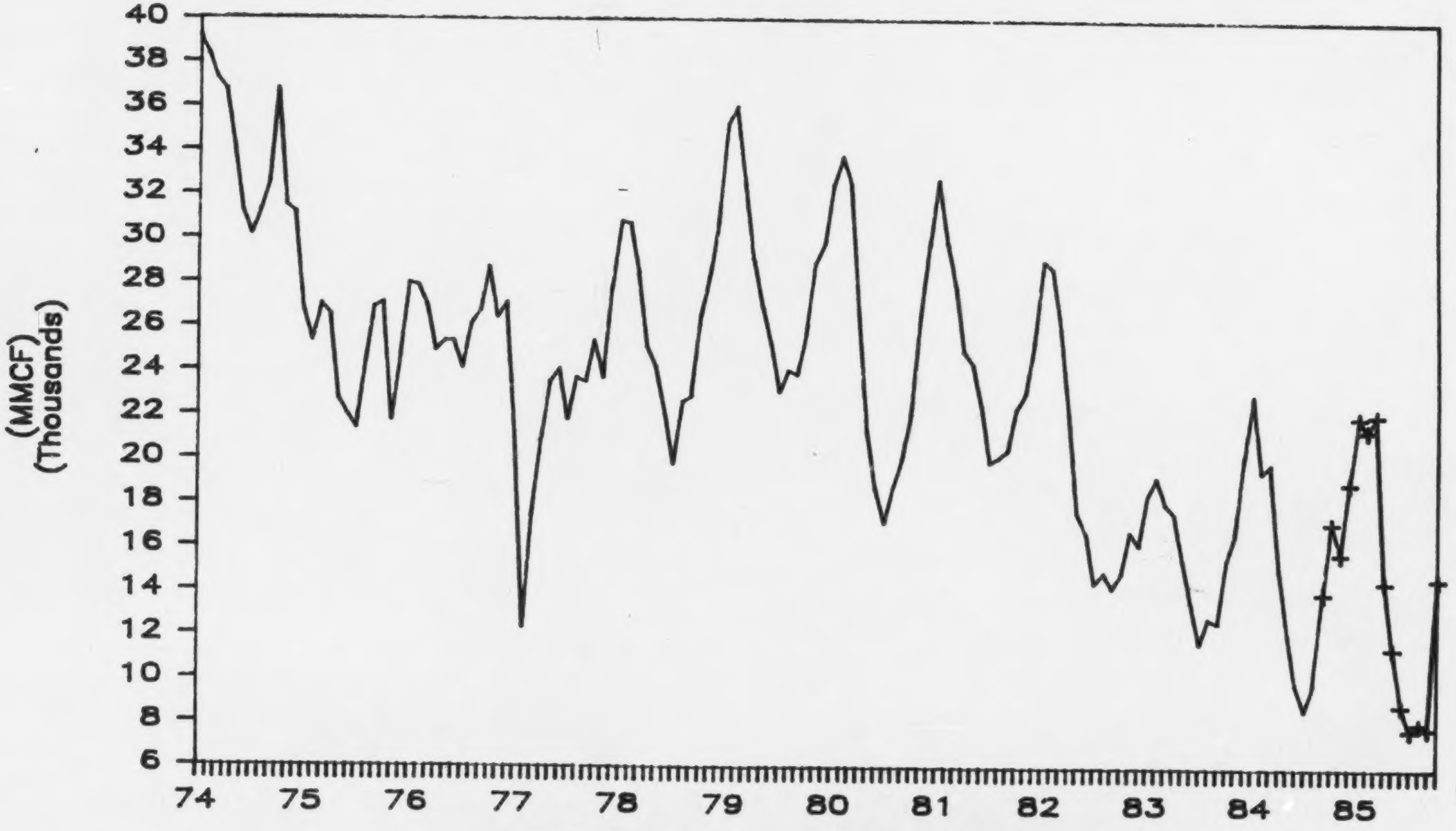
Table B-7: Independent Forecast of Ohio Natural Gas End User Requirements-Industrial Sector (MMCF)

Month	Lower 95% Confidence Limit	Forecast (1984-1985)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
November	14,800	15,800	19,800	16,695	-5.36
December	15,800	19,000	23,200	20,184	-5.87
January	18,000	22,000	26,000	22,979	-4.26
February	17,400	21,400	25,400	19,460	9.97
March	18,100	22,100	26,000	19,863	11.26
April	12,500	14,500	17,500	15,009	-3.39
May	9,200	11,500	13,800	12,161	-5.44
June	7,100	8,900	10,700	9,796	-9.15
July	6,500	7,800	9,100	8,644	-9.76
August	6,700	8,100	9,500	9,794	-17.30
September	6,900	7,900	8,900	*	*
October	13,500	14,700	15,800	*	*

*Actual figures were not available.

Source: ODOE Form SG-1 and the Ohio Division of Energy.

FIG. B-3. MONTHLY OHIO INDUSTRIAL NATURAL GAS CONSUMPTION
ACTUAL AND PROJECTED (JANUARY 1974 - OCTOBER 1985)



SOURCE: THE OHIO DIVISION OF ENERGY

—— ACTUAL + PROJECTED

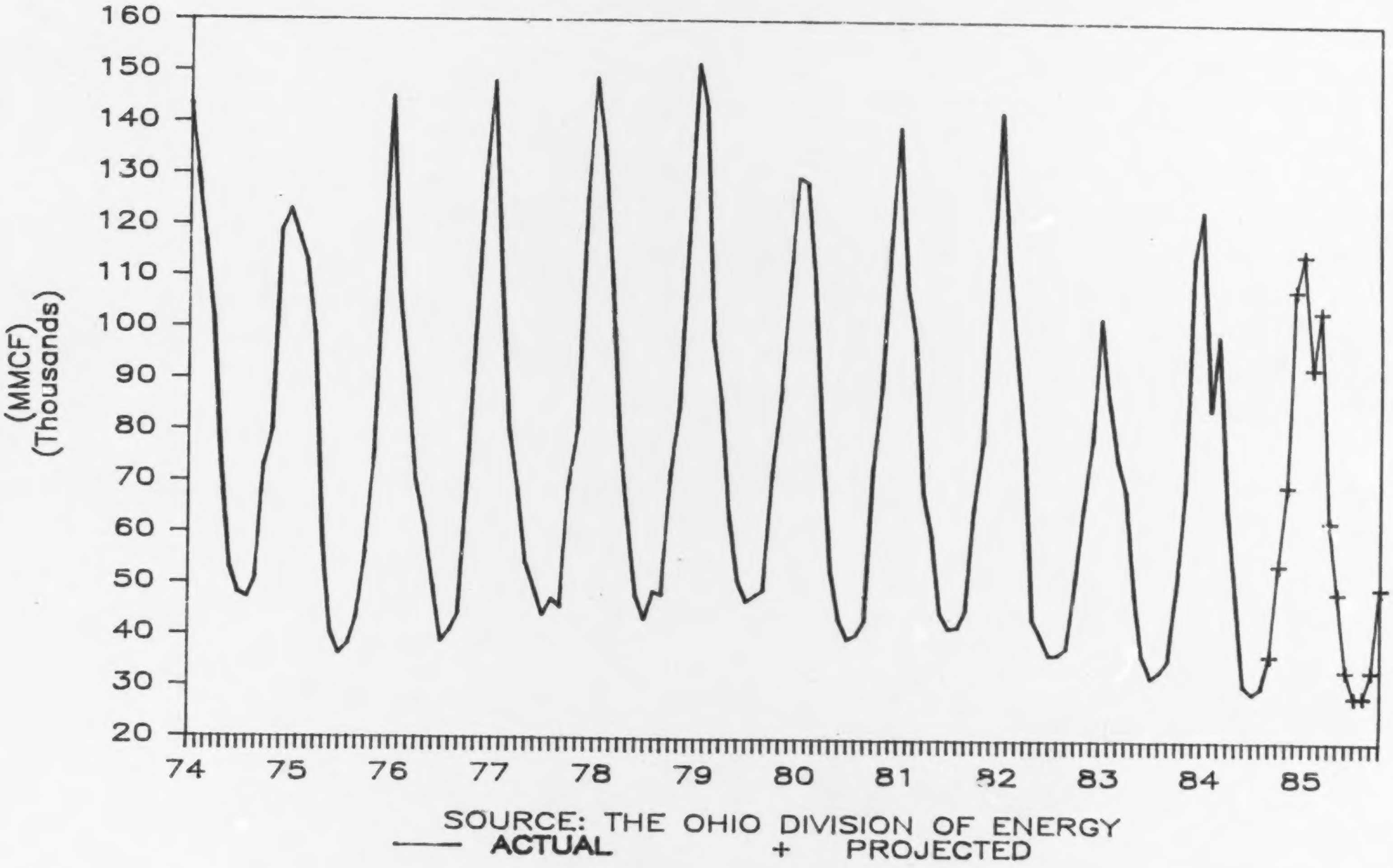
Table B-8: Independent Forecast of Ohio Natural Gas Requirements-Total-All Sectors (MMCF)

Month	Lower 95% Confidence Limit	Forecast (1984-1985)	Upper 95% Confidence Limit	Actual (1983-1984)	Forecast Percentage Change
November	60,300	70,000	78,700	68,668	1.94
December	87,100	108,200	129,300	114,585	-5.57
January	98,000	115,000	133,000	123,549	-6.92
February	8,100	93,000	104,000	84,756	9.73
March	86,000	104,000	122,000	99,081	4.96
April	51,000	63,000	75,000	65,057	-3.16
May	41,200	49,200	57,200	48,525	1.39
June	28,100	34,100	40,100	31,044	9.84
July	24,000	29,000	34,000	29,425	-1.44
August	24,100	29,100	34,100	30,744	-5.35
September	29,100	34,100	39,100	*	*
October	45,200	50,200	55,200	*	*

*Actual figures were not available.

Source: ODOE Form SG-1 and the Ohio Division of Energy.

FIG. B-4. MONTHLY TOTAL OHIO NATURAL GAS CONSUMPTION
ACTUAL AND PROJECTED (JANUARY 1974 - OCTOBER 1985)



SOURCE: THE OHIO DIVISION OF ENERGY

TABLE B-9 Projected Supply and Demand for Eight Major Ohio Natural Gas Utilities (MMCF)

COMPANY: CINN. GAS & ELEC.

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	5/85	6/85	7/85	8/85	SUMMER	WINTER	YEAR
SUPPLY	2743	4064	7685	11265	12187	10678	8621	5832	3908	2770	2679	2401	24397	50436	74833
DEMAND	2743	4064	7685	11265	12187	10678	8621	5832	3908	2770	2679	2401	24397	50436	74833
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: COLUMBIA GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	5/85	6/85	7/85	8/85	SUMMER	WINTER	YEAR
SUPPLY	9202	14392	23379	30704	36374	31412	25609	17435	11033	7141	6916	7561	73680	147470	221150
DEMAND	9202	14392	23379	30704	36374	31412	25609	17435	11033	7141	6916	7561	73680	147470	221150
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: DAYTON POWER & LIGHT

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	5/85	6/85	7/85	8/85	SUMMER	WINTER	YEAR
SUPPLY	1856	3099	4770	7068	8570	8526	5843	4608	2325	1503	1502	1648	16541	34777	51318
DEMAND	1856	3099	4770	7068	8570	8526	5845	4608	2325	1503	1502	1648	16541	34779	51320
DEFICIENCY	0	0	0	0	0	0	2	0	0	0	0	0	0	2	2
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: EAST OHIO GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	5/85	6/85	7/85	8/85	SUMMER	WINTER	YEAR
SUPPLY	21076	26924	27291	36550	42179	37260	31978	29370	25233	20567	19425	19371	161966	175258	337224
DEMAND	21076	26924	27291	36550	42179	37260	31978	29370	25233	20567	19425	19371	161966	175258	337224
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

TABLE B-9 Projected Supply and Demand for Eight Major Ohio Natural Gas Utilities (MMCF)

COMPANY: NATIONAL GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	5/85	6/85	7/85	8/85	SUMMER	WINTER	YEAR
SUPPLY	1090	1109	1136	1300	1569	1430	1329	1287	1199	1192	1175	1333	8385	6764	15149
DEMAND	1090	1109	1136	1281	1551	1408	1309	1280	840	1192	1175	1333	8019	6685	14704
DEFICIENCY	0	0	0	-19	-18	-22	-20	-7	-359	0	0	0	-366	-79	-445
% DEFICIENCY	0.0%	0.0%	0.0%	-1.5%	-1.2%	-1.6%	-1.5%	-0.5%	-42.7%	0.0%	0.0%	0.0%	-4.6%	-1.2%	-3.0%

COMPANY: OHIO GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	5/85	6/85	7/85	8/85	SUMMER	WINTER	YEAR
SUPPLY	282	525	662	886	1025	890	736	497	335	218	215	238	2310	4199	6509
DEMAND	282	525	662	886	1025	890	736	497	335	218	215	238	2310	4199	6509
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: RIVER GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	5/85	6/85	7/85	8/85	SUMMER	WINTER	YEAR
SUPPLY	175	274	385	533	624	553	433	308	215	183	173	159	1487	2528	4015
DEMAND	175	274	385	533	624	553	433	308	215	183	173	159	1487	2528	4015
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

COMPANY: WEST OHIO GAS

PROJECTED SUPPLY AND DEMAND (IN MMCF)

MONTH/YEAR	9/84	10/84	11/84	12/84	1/85	2/85	3/85	4/85	5/85	6/85	7/85	8/85	SUMMER	WINTER	YEAR
SUPPLY	460	776	1130	1393	1828	1694	1361	880	532	435	280	381	3744	7406	11150
DEMAND	460	776	1130	1393	1828	1694	1361	880	532	435	280	381	3744	7406	11150
DEFICIENCY	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
% DEFICIENCY	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%

FIG. B-5. ANNUAL OHIO NATURAL GAS CONSUMPTION AND PRICES: RESIDENTIAL SECTOR (1960 -1983)

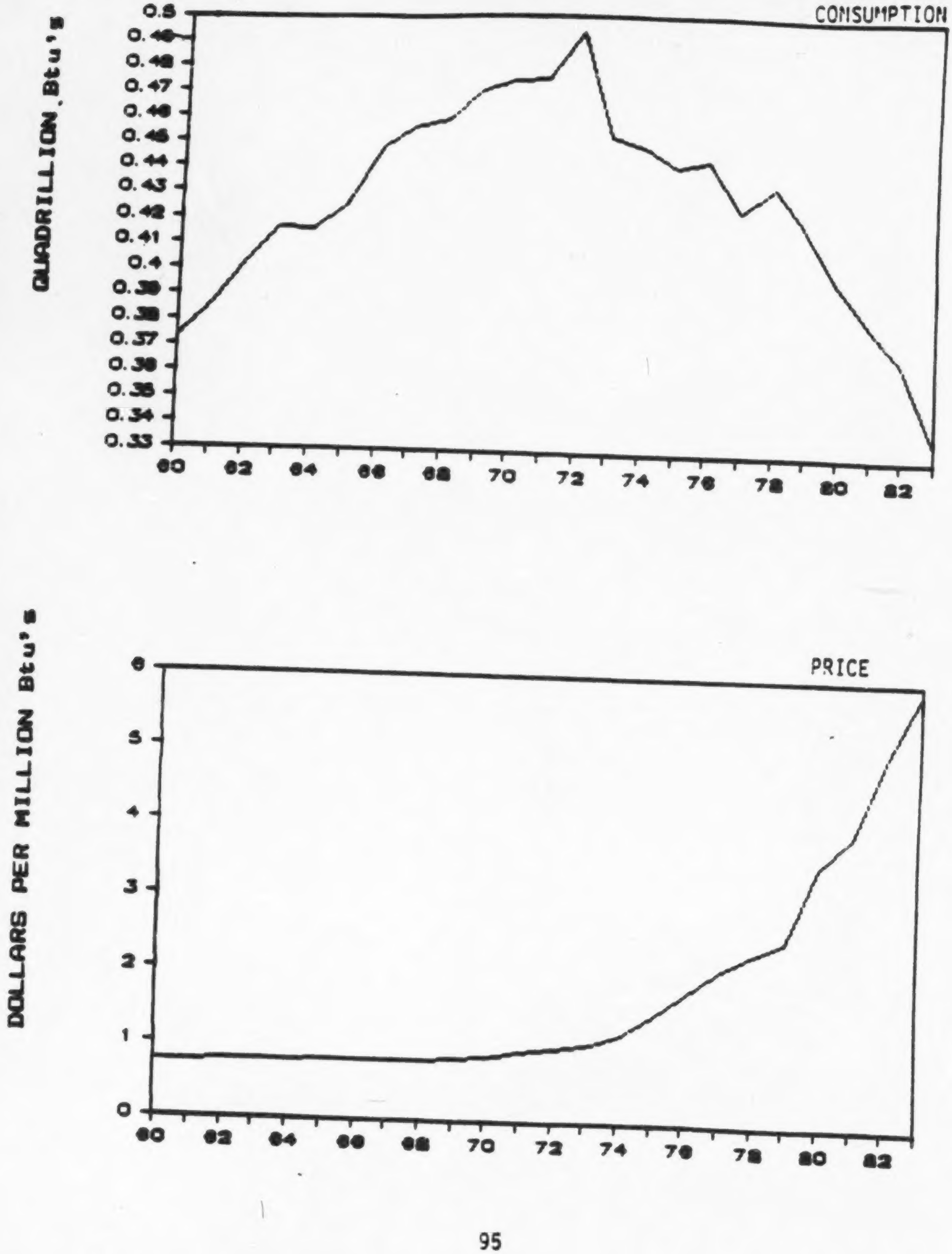


FIG. B-6. ANNUAL OHIO NATURAL GAS CONSUMPTION AND PRICES: COMMERCIAL SECTOR (1960 -1983)

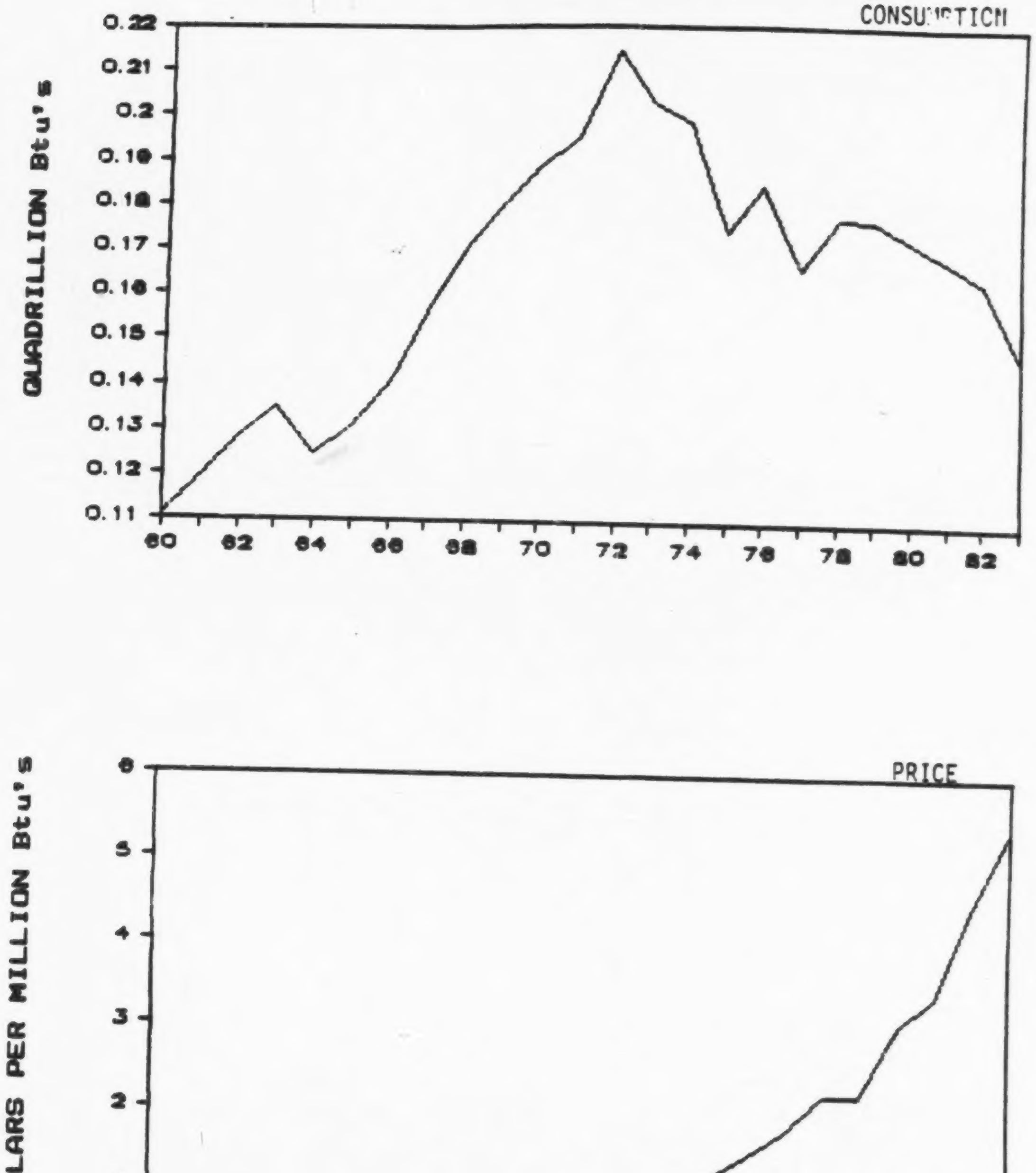


FIG. B-7. ANNUAL OHIO NATURAL GAS CONSUMPTION AND PRICES: INDUSTRIAL SECTOR (1960 -1983)

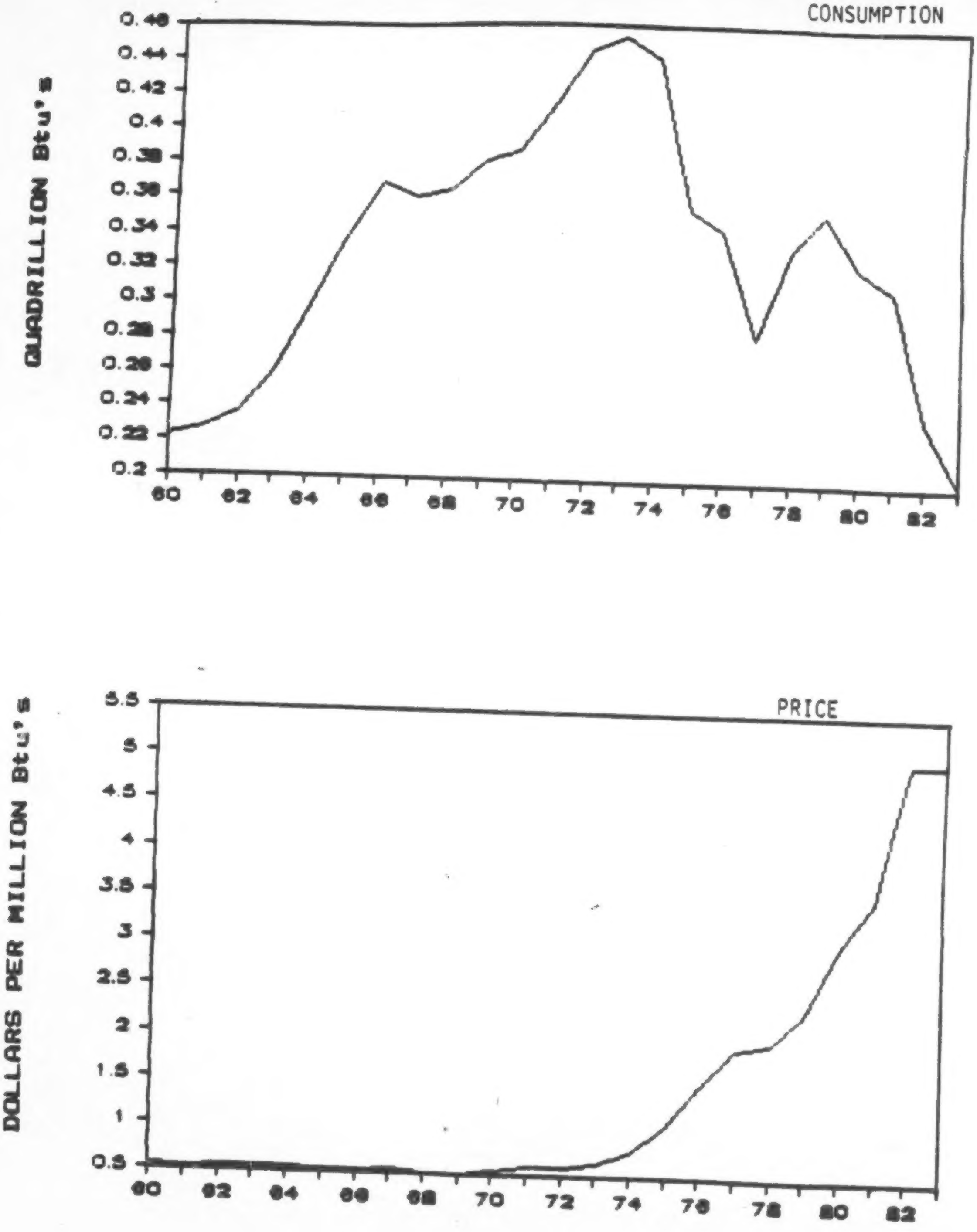


FIG. B-8. MONTHLY OHIO NATURAL GAS CONSUMPTION AND PRICES: TOTAL OF ALL SECTORS (1960 -1983)

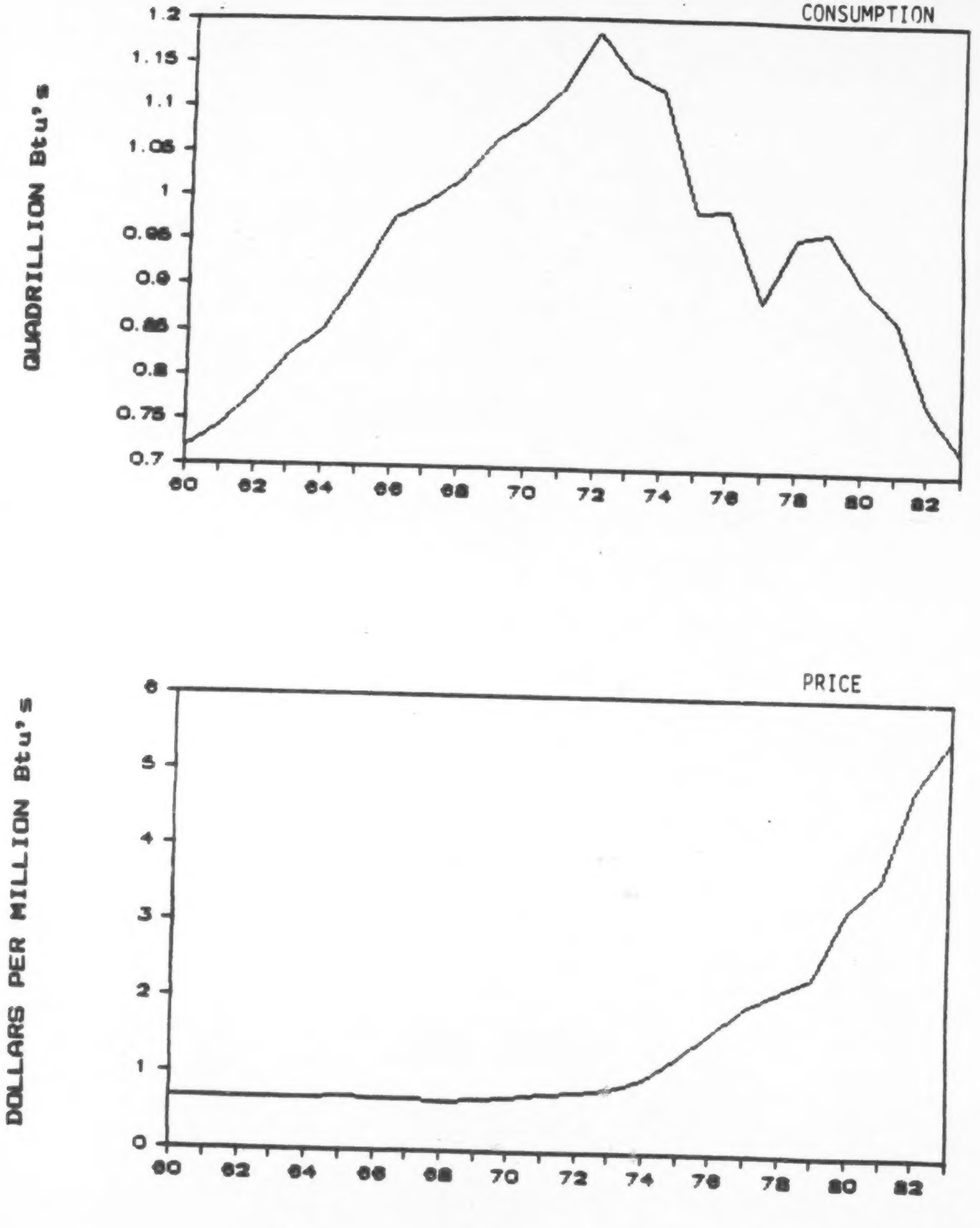


FIG. B-9. ANNUAL OHIO NATURAL GAS CONSUMPTION BY SECTOR
(1960 - 1983)